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ART. I.—FERTILIZERS, THEIR MODE OF ACTION.

REASONS FOR THE COMBINATION AND MIXTURE OF FERTILIZERS TO MAKE THEM ACT AS THE SOURCE OR CAUSE OF THE NOURISHMENT OF PLANTS, AND THE PROPRIETY OF THE MIXTURE KNOWN AS DAVID DICKSON'S FORMULA.—*Southern Cultivator, Atlanta, Ga.*

BY J. C. DELERY, ESQ.

The fact must be noted that plants derive their sustenance from the atmosphere through their leaves, and from the earth, by absorption, through their roots. The first must be absorbed in the gaseous form, and the second in solution with water. The substances that form the stems, the leaves, the fruits, and buds, are various, and are supplied in various proportions. Silica, and other inorganic substances, are furnished in the soluble form; carbon, the next in relative quantity after silica, is furnished in the gaseous form, and principally through the atmosphere; the ammonia and nitrogenous compounds are furnished partly in the gaseous, but principally in the soluble form. These substances, for the greater part, exist in the soil, but are not always in the condition to be assimilated by the plants, hence the necessity of modifying them by the use of fertilizers, to make the soil productive. Fertility is the result of chemical action, and this induced by the contact of agents and substances having mutual affinities, and these agents are the fertilizers.

The compound used by David Dickson consists of Peruvian guano, gypsum, bone dust, and salt.

Guano being introduced in a soil consisting of sand and clay, will cause it to produce crops of substances rich in ammonia, phosphates, and nitrogen and carbon. These are not all derived immediately from the guano. It acts powerfully as a solvent of substances existing in the soil, and by enabling plants to draw a part of their sustenance from the atmosphere. Ammonia and potash develop the plant rapidly while young. If they had no other effect, they would still have the important one of placing the plant in a condition to enable it to draw more freely from the atmosphere, from its having a larger surface of foliage exposed to its benificent influence. As there is a tendency in all plants to establish an equilibrium in their roots and leaves, the foliage being developed extraordinarily will hasten the growth of additional roots, and *vice versa*. A familiar example of it may be seen in the pruning of the grape vine, which makes it produce a vigorous growth of leaves, stems and fruit, in consequence of the roots being out of proportion with the limbs.

Gypsum, (sulphate of lime,) being partly soluble, may pass directly into the plant, or it may be decomposed by the carbonate of ammonia existing in rain water, the sulphur being absorbed in the form of sulphate of ammonia. One of the effects of gypsum, introduced into the soil, is to give a fixed condition to the nitrogen and ammonia derived from the atmosphere.

If plants be furnished with gypsum, (sulphate of lime,) and salt, (chloride of sodium,) a mutual decomposition takes place, and two compounds are formed, sulphate of soda and chloride of calcium. The sulphur and the alkali will be absorbed and assimilated by the plants, and the chloride of calcium will be eliminated by the roots. The salt, then, enables the plants to draw from the soil their sulphur, derived from the sulphate of lime.

The alkaline bases existing in a plant are always saturated in invariable proportions with organic acids, and exist in the form of salts of certain acids, potash in grapes, as cream of tartar, (bitartrate of potash,) they cannot exist as a neutral compound. The production of a certain quantity of organic acid is required by the peculiar nature of a plant, and if the bases do not exist in sufficient quantity in the soil, the growth of the plant will be arrested. When several bases of alkali are presented to plants, they will discrimi-

nate to a certain extent, and take up by preference that which is its appropriate base.

If it be found, as it is the fact, that upon land on which fertilizers are used, the phosphate taken off with the crop is in much greater quantity than was given to it in the fertilizers, and that without the fertilizers it would not have produced the phosphated crop, then it must inevitably be concluded that some peculiar action of the fertilizers has developed the phosphated, nitrogenous, and other compounds. Their action has some analogy with that of stimulants and aromatic substances, by bringing dormant forces into activity, as humus is made to yield its carbonic acid by combination with oxygen, when exposed to the influence of the atmosphere. Humus of wood contains in 100 parts, carbon 52 and water 48. The substance of vegetable mold is more varied, being a mixture of disintegrated minerals, with vegetable and animal substances. In this are found the substances necessary to the nourishment of plants. The peculiar action of fertilizers is to cause these to be presented to plants in a form in which they can be absorbed and assimilated. The humus and vegetable mold cannot be assimilated by plants as such, because it is soluble in water only in the proportion of one ten thousandth part. As such soils are known to be most fertile that are richest in vegetable mold, it is important to know what are the chemical transformations it undergoes to become the food of plants.

The ashes of plants furnish potash, lime, sulphuric, and phosphoric acid ; these may be assimilated by plants, because presented to them in the proper form ; if phosphate be presented in the metallic state, it remains inert ; salt, (chloride of sodium,) in solution, if not accompanied by other substances with which it will form chemical compounds, will be absorbed, but not assimilated, and will remain salt. The roots of plants, acting like a sponge to which moisture is presented, absorb, without discrimination, the substances presented to them, which appears, however, not to be general, as plants producing soda, near to the sea shore, will not absorb it under certain conditions. The *salsola kali* requires the chloride of potassium to flourish. Although plants discriminate to a certain extent and take up their proper bases, yet they absorb generally what comes in contact with their roots in a soluble form,

and they may retain it unchanged chemically. An example of indiscriminate absorption is that of the sugar cane, which absorbs salt and retains it through the whole process of the manufacture of sugar from it.

Salt, besides its chemical combinations with other substances, has its own peculiar quality and beneficial effect in drawing moisture from the atmosphere by its affinity for water.

We may now understand the various effects of David Dickson's mixture. If he arrived at his results by chemical researches and analyses, he is entitled to all the merits of an inventor; if not, then he has shown considerable sagacity in conducting his experiments. If greater perfection is to be reached, it must be by a strict analysis of soils and a study of the peculiar substances required for the growth of plants. The analyses of soils, to determine what are the ingredients in which they may be deficient, in order to be able to supply them; when the soils may contain the ingredients, but in a form in which they cannot be assimilated by plants, and what are the substances which it may be necessary to add to produce chemical changes for converting them to the proper form, either gaseous or liquid. An analysis of the constituents of plants is necessary to determine what are the ingredients required for their production. It could, perhaps, be discovered that these ingredients would require to be furnished at different times and seasons to produce their best effects. The functions of plants, for the formation of their own substances, are active at various times and seasons, according to the kind of product elaborated, as the formation of sugar, starch, and gum occurs when the plant has attained a certain degree of maturity, and ceases when the function has been fulfilled, and so for others. There is, then, a time at which it is proper to furnish the ingredients to produce their best effects. If put into the ground long before they are wanted, they may be exposed to loss; if too late, their action is missed. The growth of a cutting, making roots and leaves from its own substance, shows that the starch was stored in it in the fall season; after its transformation into a new being, with roots and foliage, it requires a new and different nourishment with its new capacities.

ART. II.—ON LEARNED SOCIETIES.

BY PROFESSOR A. VALLAS.

NUMBER TWO.

In a former article, I gave a sketch of the learned societies of antiquity, especially of the best known, the Museum at Alexandria, in Egypt.

After the fall of Egypt, there was a short time, an interval of a single century, when all love of literature and science seemed to have died out. This was the time of the conquest, by the Arabs, of all the nations from the Indus to the Atlantic. This accomplished, such a love of science and arts pervaded the conquerors that they, in turn, became the masters and teachers of other nations. While at Constantinople, the only remaining centre of Greek culture, all philosophy had degenerated into theological quibbles. The sciences found an asylum at Bagdad, at the court of the Califs.

Remarkable for their love of learning were the descendants of Abbas, the uncle of the prophet. Who does not remember from "The Thousand and one Nights," the great Calif Haroun al Rashid, or Aaron the Wise, the cotemporary of Charlemagne? This ruler was equally great and liberal in the promotion of science. His court gave support to many learned men, and many first class works were translated, under his benign rule, from the Greek into the Arabic tongue. During his reign and that of his successors, the vanquished nations were bound to pay tribute in valuable Greek manuscripts, and whole caravans of camels, carrying such manuscripts, were often seen to wind their way towards Bagdad, the seat of the empire of the successors of the prophet. It is to be regreted, however, that most of these manuscripts were destroyed as soon as their translation was completed.

Most of the califs entertained scholars at their courts, in what relation, whether in the form of a learned society established by law or decree, or for some transitory occupation, as the translation of some valuable manuscript, I am unable to say; but of the

seventh calif, Al-Mamum, whose reign commenced in 813, the evidence is almost overwhelming that he organized and entertained a kind of academy at Bagdad.

It is wonderful to read how much the Arabs and their co-religionists did for public education. They are working even now in Central Africa to civilize the negroes and to convert them to the Islam, while in their older dominion all vigor seems extinct.

The whole empire was dotted with mosques, or places of worship, and there was no such place without a well provided school. High schools or colleges were numerous, and these were mostly independent of their religious institutions.

In all of this the Arabs were the pattern of other Asiatic nations. Of Genghis Khan, the scourge of so many nations, it is known that he had much respect for scholars and entertained a great many of them at his court. Under his successors, China was in a very flourishing condition. Kublai, or Hupilai, invited many scholars to China, had many works translated into the Mongol, or court language, founded considerable public libraries, and established two grand academies, one of them composed of western or Arab scholars, the other consisting of Chinese learned men. For their use he ordered mathematical and astronomical instruments to be made, and one of their chief objects was the survey of his empire ; and it is a remarkable fact, that most of the canals in China were constructed in his time. Under him and his successors, up to the time of the expulsion of the Mongols from China, this empire was in the most flourishing condition, the like it never reached again under the native and following Mantchoo governments.

About two centuries after Genghis Khan, another destructive meteor arose in Central Asia in the person of Timourlenk, or Timour the Lame. This sanguinary conqueror showed as much love of learning as Genghis Khan, as will be seen from the relation of his secretary, Schiltberger, a German from Munii, whose book was one of the first printed in Germany, under the title of *Schiltberger der viel wunders erfahren hat.* Ulm., 1473. (Schiltberger who has witnessed many wonderful things.) A real academy, however, was only established by his nephew, Ulug-Beg, with a great observatory and costly astronomical instruments. The astronomical tables of Ulug-Beg were in high estimation for several centuries. They

were published in England by Hyde, with a biography of Ulug-Beg.

But let us leave the East and return to Europe; for after the long oppression and readjustment of the Dark Ages, Europe again gave signs of life. In the middle of the fifteenth century Constantinople, with its remnant of Greek scholarship, was threatened by the savage but valorous Turks—and it fell at last to the greatest consternation of all Europe. The few scholars of Constantinople fled with their manuscripts to Italy, and found the soil well prepared for the reception of the seed of Greek learning which they carried with them.

In the revival of letters in Italy, which followed the extinction of the so-called Eastern Empire, we shall not be surprised to find among the Italians a fondness of forming associations for the promotion of literary and scientific purposes. These associations were mostly private, nay, sometimes secret, so as to move untrammeled by the papal curia. And while they often treated on very important questions, they hid themselves under ludicrous names. They mostly called their societies Academiæ, but then there were academies of the abandoned, of the confused, of the discordant, of the drunken, of the eccentric, of the unable, of the uncultivated, of the lunatics, of the dead, of the neglected, of the obscure, of the lazy, of the rude, of the simple, of the thirsty, of the somnolent, etc.

Famous among these so-called academies was the *Academia della Crusca*, (bran academy,) in latin *Academia Furfuratorum*, whose chief object was the sifting of the Italian language. Their meeting place resembled a mill, and even their candlesticks exhibited the form of flour-sacks. We all remember how active the grammarians and critics of the Museum were to preserve their language in its native purity. A similar need was felt in Italy after its having been overrun and partly settled by so many barbarous tribes. This sifting academy was needed in order to eliminate as many barbarisms from their language as possible; but they sullied their fame and drew public opprobrium upon themselves by their relentless persecution of Tasso, the inspired bard, of the *Gerusalemme Liberata*. A similar phenomenon we shall meet in the history of the *Academie Francaise*.

Most of these Italian academies, as I have mentioned already, were private associations. They sprang up and died away like mush-

rooms. Jarkins, in his "*Specimen Historiæ Academiarum Italiæ*," Leipsic, 1725, has the names of 536. Most of them had an ephemeral existence. As they sprung up for personal and local purposes, so they died away as soon as those purposes could not be obtained. That *cameraderie* and the glorification of individuals was often the moving cause, may easily be imagined. Sometimes it was a scion of the nobility, sometimes a poet, who assembled around himself some minor lights, and called the assembly an academy. Frederic Borromeo, being a student, convenes his fellow students. This was the *Academia Accuratorum*. When cardinal, he exhorts the students of theology to meet frequently and discuss interesting subjects. This was the *Academia Hermathenæorum*. At last his Eminence, having become rich, endows twelve scholarships, for as many priests, in his diocese in connection with a large library, and prevails on the Holy Father to confer extraordinary privileges on them. This was the *Collegium Ambrosianum* or, as they called it afterwards, *Academia Borromeo*. But it proved to be an academy of fat sinecurists and do nothings. To give you an idea of the papal favors showered on them, I will simply mention that the Pope created them Roman citizens, and counts of his palace and court at the Lateran, allowing them to wear all the ornaments of the counts of his court.

Not all, however, of the Italian academies were of this stripe. Among the most serious and fruitful of this kind were the *Istituto della Scienze*, of Bologna, which was enriched by Count Marsigli with a library of 150,000 volumes; the *Academia del Cimento*, or academy of experiments, at Florence, and several others, which worked faithfully to enlarge the boundaries of mathematics and natural philosophy.

Let us now turn our attention to centralized France. Italy was then divided into small states, hence it could not afford that support to learned societies that consolidated governments are able to do. In France we find fewer academies and they are of a later date than in Italy, but they were of larger dimensions and exerted greater influence on the development of the different sciences, although they cannot boast of lofty origin.

The series of academies in France began with the French Academy, the *Academie Francaise*, a verbal institution of humble origin, which origin is well worthy, however, of being recounted, because it

shows the spirit of the times and with what difficulties progress had to contend in a consolidated goverment like that of France. I shall recount the origin according to *Pelissow's Histoire de l'Academie Francaise.* Pelissou was himself a member of the academy, nay, he was elected a member just on account of his writing this history. Moreover, he is the only source for the early period of the history of the French Academy, as shortly after he was imprisoned, and the minutes of the academy, which accompanied him to the prison, were lost.

Now according to Pelissou, the *beaux-esprits*, or rhymeters and essayists of Paris, being desirous of seeing each other at regular intervals, began to meet at the house of Canrobert in 1629. Shortly after, one Boisrobert was introduced into the society. Boisrobert, according to Pelissou, was then attached to the suit of the Cardinal Richelieu, and he used to take great care to amuse his master, after the noise and troubles of the day's affairs, by his agreeable stories, which nobody could recount better than he, and by reporting to him all the little news of the city and court. Now, Boisrobert spoke very favorably of the new association, and by doing so, produced such a good impression on the Cardinal that he sent them word to form a regular corporation, and to devise rules and regulations for their future government. But, of course, the new institution must have a name. They, therefore, set to work to find an appropriate title. After protracted discussion, the views were almost equally divided. Some were for the title of *Academie des Beaux-Esprits*, others for *Academie de l'Eloquence.* But as soon as they learned that the Cardinal had approved already the title of *Academie Francaise*, they unanimously adopted this as the very best.

Next in order was to request, humbly, the Cardinal to accept the protectorate of the institution. The secretary, therefore, was instructed to address a petition to the Cardinal, in which the following passages occur: "If the Cardinal had published his works, the French language would have attained already its perfection, and the thing would have been done which the society wishes to do. But as the Cardinal is hindered in this by his extraordinary modesty, he cannot but approve that others seek the treasures kept hidden by himself." "That the society wishes to take its life and breath

from him, and that the mere hope of his acceptance arouses their sweetest feelings." "That they want only to please him, the wisest of all men." etc.

After so much abject servility displayed before the real ruler of France, we must not be astonished to find that the Parliament of Paris, the last refuge of a shadow of liberty in France, refused to register the charter of the academy. And when it was compelled to do so, it added this clause into the charter: "Provided the object of the society be exclusively the cultivation of the French language."

The great mass of the people were opposed to the new institution, because to forge new words or to legislate on language was regarded as a great folly. The more enlightened, on the other hand, were afraid that the academy would prove a tool and support of the Cardinal's tyrannical proceedings. It was also ridiculed on all hands, as for instance, by the *Comedie de l'Academie*, by a merchant's removing from the neighborhood of its meeting place on account of their weekly holding an *Academie de Monopoleurs*, etc. Most cruelly, however, they ridiculed themselves. When the time came to show specimens of their proficiency, Paris was ringing with laughter over their essays. Their themes were the following: *Sur je ne Sais Quoi; La Defense du Theatre; Contre les Sciences; Des Differences et des Conformites qui sont entre l'Amour et l'Amitie; Contre l'Amour; De l'Amour des Esprits; De l'Amour des Corps*, etc.

Richelieu got tired of these sophomoric exercises of his *proteges*, and sent them word that he expected something more solid from them. They therefore left off declaiming and turned to writing for the court theatre. But here their difficulties only increased. Richelieu had the weakness to fancy himself a great poet, and therefore interfered often in the economy of the pieces, nay, in the use of expressions and single words. I could show you several instances of the vulgarity of his taste if I did not think proper to hasten to recount a catastrophe that stopped the academy in its dramatic career and forced them to choose some other employment.

Corneille, at that time not yet a member, came out with a piece under the title of "Cid." When "Cid" was given for the first time, all Paris and France was frantic with enthusiasm. The only subject of conversation was the "Cid." Everybody knew some

thing from it. The children had to learn it by heart, and in several parts of France it became a proverb, "this is beautiful like the 'Cid.'"

The Cardinal did not like it. Why? Pelissou and his contributor in the history of the academy, Olivet, both say that Richelieu, the dramatic poet, felt himself annihilated by a dramatic splendor which he could not hope to attain. Several members of the academy fathomed the Cardinal's thoughts and managed to have the piece disapproved by the academy. As the majority could not see it, he said: "*Faite savoir a ces messieurs que je le desire, et que je les aimerai comme ils m'aimeront.*"

Five months after was published "*Les Sentiments de l'Academie Francaise sur la Tragicomedie du Cid.*" It is true, the piece was not written in accordance with the dramatic rules of Aristotle, it was, in fact, the first romantic piece; but it pleased everybody, from the king to the beggar, and the academy only made themselves more unpopular than they were, and a new shower of ridicule and epigrams was heaped upon them as their reward. It was about that time that Pirou, a popular satirist, commenced to call them *les invalides du bel-esprit*, and that he made the following epitaph on himself:

"*Ce git Pirou, ne fut rien,*
Pas meme Academicien"

Dismayed by the verdict of the whole nation, the French Academy paused for a moment, looking for some other useful occupation, when the idea of a great official dictionary loomed up before their eyes, and although they dreaded the enterprise, they found no means of escaping it. How they proceeded about it, and how they acquitted themselves of the job, how they incurred some more opprobrium, it would be long to tell. In the meantime, Richelieu died, and the court pensions were withdrawn from most of the members, for Richelieu never gave them fixed salaries, lest they should feel too independent. This brought the French Academy near its ruin, when in the person of Colbert, the merchant's son, a deliverer arose to save its more useful members from the shipwreck.

While the French Academy strove against the ills that were inherent in its elements and composition, a great civil war convulsed England. The demon of passion being unchained, brought

unspeakable sufferings on the nation. Many of those who had taken part in the civil war being tired of the delusions and deceptions incident to such a state of society, sought as soon as they could consolation and peace of mind in the cultivation of the exact sciences. They formed first a private society at London, which, however, under the style and title of *Regalis Societas*, was soon confirmed by the king, the first charter being issued in 1662. To defray the expenses of the society, a part of the king's revenues from Ireland was assigned to them.

At about the same time, namely 1662, the mathematicians and philosophers of Paris also began to assemble at Montmor's, a high officer of the king. Tuke hastened to inform his colleagues at London of this. He wrote: "At Paris there are several such societies, most numerous among them being the French Academy, but they are now very much declined by the barrenness of the subject, which is only the embellishing of their style and polishing of verse." Speaking of the assembly at Montmor's he added: "I told them that our nobility, whose revenues are ample, are desirous of acquiring knowledge, and that we are happy to have a king who protects learning."

Upon this letter of Tuke's, Moray, the secretary, addressed a letter of welcome to the Parisians, to which they replied: "We have no nobles that either themselves love science or would be willing to prevail on the king to do something for it. How few Montmor's and Surdis' are among us who spend money for the promotion of science. O, ye happy, whose country is full of such men and who therefore are in a condition not only by reasoning, but by numerous experiments, to investigate truth." I have given a sketch of this correspondence because it shows the enviable condition of England at that time, and because it gave the assembly at Paris, which was the embryo of the Academy of Science, a practical, experimental direction. And I am sorry to find in "Davy's Consolation in Travel," the following language: "We may in vain search the aristocracy now for philosophers. There are very few persons who pursue science with true dignity, it is followed more as connected with objects of profit than those of fame."

Before proceeding further, I must mention the sources from which this sketch of the venerable societies at London and Paris is taken.

First in order is "Birch's History of the Royal Society of London," and Thomson's history of the same. Much light may also be gathered, especially on its present condition, from "Babbage on the Decline of Science in England, and Some of its Causes," a copy of which is, if I am not mistaken, in the Lyceum library. In regard to the Academy of Sciences at Paris, the oldest source is Du Hamel's *Regiae Scientiarum Academiæ Historia.* DuHamel was a member of the Academy of Sciences and its secretary.

INTER-OCEANIC RAILWAY—A STUDY.

BY ANDREW W. KERCHEVAL.

It is my design in this paper simply to present for the thoughtful and intelligent consideration of your readers the proposition of an eligible railroad route between the Atlantic and Pacific coasts, with extensions to the Gulf of Mexico, and certain conditions and advantages on which its feasibility and importance may be safely rested. Whether the present Pacific Railroad meets the large expectations of its patrons and projectors, needs not to be here discussed; enough for us to know the fact is patent—that its passage over the Rocky Mountains, at such high latitude, makes it certain that the successful and economical working of that road is, and will continue to be, seriously and prejudicially affected by the actual obstacles of an inhospitable climate, which it is in vain to hope can be effectually met and finally surmounted. For is not this very condition of climate a prime elementary condition in choice of route for a great internal improvement, intended for passengers, mails, and general freight transportation across the continent throughout the entire year? Indeed, in the character of climate, soil and productions, we find essential considerations entering into the estimation of any and every great internal improvement.

In examining, however cursorily, a map of the United States, the chief natural obstacles to the construction of an inter-oceanic railway consist of two great chains of mountains, the Alleghanies and Rocky mountains. The Alleghanies make the water-shed into the Atlantic from their eastern, and, through the Mississippi Valley, into the Gulf of Mexico, from their western slope. The most eligible point for crossing these mountains presents itself, naturally, as

the first point for our consideration. Observe then, that all our extensive vallies are traversed by great water courses, parallel to the approximate mountains. The Potomac river, for example, is formed by confluence of its north and south branches, near Cumberland, Maryland, at the head of the Chesapeake and Ohio Canal, and on the line of the Baltimore and Ohio Railroad. Its main tributaries are the Shenandoah, falling into it at Harper's Ferry, which waters the great Valley of Virginia, lying between the Blue Ridge and North mountains, and the South Branch watering a lesser valley between North mountains and the backbone of the Alleghanies. Now, near the head of this South Branch, we find, in a very small compass, springs flowing into Big Kanawha and Monongahela, (affluents of the Ohio,) and into James and Potomac rivers, (affluents of the Chesapeake,) waters actually flowing into the Atlantic and Gulf of Mexico. Here, then, we have the summit, the apex of the Alleghanies, while with the ascent of the South Branch on one, and of Greenbriar and Elk on the other side, there occurs a marked depression in the mountain. At Romney the elevation above tide water is about 600 feet, at the head of the South Branch, some eighty miles further south, it is a little more than 2000 feet, without an intervening obstacle, and in almost a direct line! The same remark is applicable to one or other of the affluents of the Big Kanawha, on the western side of the mountains. Hence we conclude that at the head of the South Branch, and passing thence on to the waters of Greenbriar river, is to be found the most eligible crossing of the Alleghanies for a railroad in their entire extent.

From New York, as a starting point, there is a continuous line of railway to Harrisburg, Chambersburg and Hagerstown to the Potomac river, at Williamsport, Maryland, crossing the great Pennsylvania Central Railroad at Harrisburg, from which point, by road last mentioned, it is 111 miles to Philadelphia.

We have from New York to Harrisburg, 186 miles; from Philadelphia to Harrisburg, 111 miles; from Harrisburg to Williamsport, 80 miles, making the distance from New York to the Potomac river, by roads already constructed, 266 miles. From Williamsport, crossing of Potomac river, to head of South Branch, is a distance of about 150 miles, which is provided for in the charter of the Potomac and Ohio Railway, granted by the last Legislature of West

Virginia, intending to cross the Baltimore and Ohio Railroad near Martinsburg, and the Alexandria, Loudon and Hampshire Railroad at a point still further south. From the summit of the Alleghanies, following down the Greenbriar, New, and Bluestone rivers, successively, we come upon the waters of Clinch river, to follow it into Tennessee, to some point near Knoxville or Kingston, and form a conjunction with the trunk line from Norfolk to Memphis, crossing the Chesapeake and Ohio Railroad upon the route. The distance from crossing of Potomac to conjunction with railroad to Memphis, over which road should be constructed, is about 475 miles.

We have from New York to Memphis a railway proposed on which 475 miles are still to be constructed, and this road will intercept or cross every main line running westward from Philadelphia, Baltimore, Alexandria, Washington, Richmond and Norfolk.

From Memphis, as its point of departure, the Southern Pacific Railroad, by way of El Paso, to the Pacific coast, is already contemplated. But from the point of conjunction of the proposed line in Tennessee, with the existing line to Memphis, another great road might well be extended, by way of Jackson, Mississippi, and Houston, Texas, to the Rio Grande, and indefinitely onward, forming convenient connections with all the prominent Gulf cities. We have now the scheme of a great trunk railway from New York, as a starting point, connecting with Philadelphia, Baltimore, Washington, Richmond, Norfolk, Raleigh and Wilmington, by their prominent completed lines, to proceed, by Memphis and the El Paso route, to the Pacific, and by a second stem, through Mississippi and Texas, to the Rio Grande.

The entire route of the proposed road from New York to the vicinity of Knoxville, a distance, say in round numbers, of 750 miles, is through an agreeable and healthy country, of mild and pleasant climate. Along its line are lands of highest excellence, production and cultivation, and mineral treasures of coal—anthracite, bituminous, cannel and semi-bituminous—iron, copper, lead, magnesia, petroleum, salt, marble, sand and limestone, granite, kaolin, and ochres ; timber, of the costliest and most valuable kinds—lands productive of Indian corn, tobacco, cotton, all the cereals, fruits, vines and vegetables adapted to a temperate climate and fertile soil the finest grazing country for the growth of live stock, valuable

water powers as future sites of manufacturing industry and enterprise; an honest, sturdy, thriving population. Upon the route proposed, every single hundred miles of road constructed would prove profitable at once, by reaching some especial resource, agricultural or mineral. As the passenger, the mail, and general freight line of transportation from North to South, from East to West, its advantages and success would far outgo our most sanguine imaginings. The treasure of California, oriental luxuries, cotton, sugar, tobacco, would make it their chosen route to our Eastern merchants, receiving in return the importations of European goods essential to the comfort of our ever growing population.

The design of this paper is mainly suggestive: it is addressed to the politico-economical intelligence of our people from New York to the Gulf of Mexico. Compare the scheme proposed with any and all others, keeping in view directness of route, resources of country passed over, facilities of grades, economy and advantages of construction. In which of these can it be surpassed? It traverses the great coal and iron regions of Pennsylvania, West Virginia and Tennessee, it opens a new line of transportation for Southern and Southwestern production, to whatever Atlantic port they may be bound. It appeals to the interests of all the Atlantic ports, the Gulf and Southwestern cities, and the Southern Pacific Rail Road enterprise. But establish this main internal line from New York to Memphis, and the Southern Pacific, with that other great road to the Rio Grande, (and perhaps interior of Mexico) will follow as its natural and necessary consequence. The great material development it is to effect will be that of the South and Southwest, while the trade it will bear to the Atlantic may well excite the interest and cupidity of capitalists in the great commercial cities.

That this route presents remarkable advantages in its directness, in obtaining the best, most eligible known passes of the Alleghanies, in traversing a country unexcelled in its vast varieties and abundance of resources, agricultural and mineral; in these propositions may be found the summary that vindicates the expediency, importance and ability of its construction. That it would come to be our great national highway from East to West, from North to South, does not, to my own mind, admit of a passing doubt.

To the consideration of this important subject the reflecting mind of

the country is respectfully but earnestly invited. Our prosperity, that we now can look to, is merely material, and ours are the great natural resources that are not surpassed on earth. To our trade and productions, the great commercial centres look with longing eyes, and to them this project decidedly addresses itself. In building up our prosperity, they wisely and permanently secure their own. And in the pages of a review, devoted through years with honor, distinction and success to the study of Southern resources and the modes of their developement, a paper embodying views which ought to excite interest and attention, upon a subject of such vital interest to its intelligent and thoughtful readers, should find appropriate place, in order that it may excite inquiry and finally elicit truth, as the proper end to which we would attain. If in these statements or speculations error be found, let that error be exposed; if they consist of valuable and practical truths, they are well entitled to intelligent, respectful attention. In this hope, and this only, they are promulgated, and if they prove advantageous, interesting and promotive of inquiry, their author's best wishes are altogether realized.

ART. III.—ROBERT J. WALKER.

We publish a notice of the biography of this industrious and intelligent politician. We appreciate fully the qualities which rendered him useful, and even distinguished, as a legislator and diplomatic lawyer. There is one feature in his character or career, however, to which we would call the attention of the Southern people. In the times when it was thought that the rights of the South might be best assured by the paper pledges of a party platform, we were exceedingly scrupulous about accepting any except the most unexceptionable political records. Hence, it was not uncommon to find a large slaveholder proscribed as unfit for trust, as an abolitionist, while even an alien to the interests of the South was accepted for his superior professions of devotion. It was in this state of Southern sentiment, that Hon. R. J. Walker, came from Pennsylvania to Mississippi, and held the highest legislative position in the gift of the latter State. During this period, he stood alongside of Mr. Cal-

HOUN and his compeers of the State Rights party. At a later period Hon. R. J. WALKER again emigrated North, and identified his interests and actions with that section. How intensely rational he became. How he denounced the "traitors" who resented the doctrines which he had professed and taught, is of little consequence now. He but followed the example of Hon. B. F. BUTLER and other Northern men with Southern principles." Our object in referring to the death of Mr. WALKER was only to convince our readers that the prosperity and safety of the South does not consist in the political professions of those apostles who denied their leaders, and disavowed their own declarations. Let us build on the sure basis of industrial and intellectual development. Let us encourage the adoption of that material policy which succeeds so well elsewhere. Let us stimulate the immigration of all the capital and white people which can be attracted by our unparralleled inducements, and the position and prosperity of the South will be permanently established.—[Ed. Review.]

This distinguished lawyer, financier and statesman, died at Washington, on Thursday morning, Nov, 11th, aged 69 years. His name has been prominently before the country many years; and if he has filled a less number of high offices than have some of our statesmen, his influence with Congress and the Cabinet has been none the less great. As an adroit political manager, he had few superiors, and if he was the inferior of Clay as a speaker, he exceeded him as a writer.

He was born in Northumberland, Penn., and received his education in the university of that State. Immediately after leaving college he commenced the study of law, and two years afterwards commenced practice at Pittsburg. Although deeply engaged in his profession, and a very young man, he entered zealously into the presidential canvass in the year 1828, and it is believed that he was chiefly instrumental in affecting the nomination of General Jackson for the high position which he so long and so ably filled. Three years in advance of the nomination by speeches and newspaper articles, he endeavored to convince the people of the North of his especial fitness for the presidency.

Although engaged in a large and lucrative law practice at Pittsburg, he determined in the spring of 1826, to remove to the State of Mississippi, where he settled at Natchez. For nine years he devoted himself to his profession, steadfastly declining political preferment, but in the year 1835, he accepted the position of United States Senator from his adopted State. He remained in the upper house of Congress for nine years where he proved himself a worthy compeer of the great statesmen of that time and where he was justly regarded as one of the leaders of the Democratic party. He strongly favored in Congress and in the Cabinet the annexation of Texas, and the vigorous prosecution of the war with Mexico, and as strongly opposed the doctrine of a protective tariff and a national bank.

Upon the accession of Polk to the Presidency, he was called to fill the position of Secretary to the Treasury in his Cabinet. This office he filled for the entire presidential term with manifest ability, and his reports written during the continuation of the Mexican war are regarded as documents of great value. At the close of Polk's administration he

spent some time in Europe, where his fame as a successful financier had preceded him, and where he was received with many marks of distinction.

On his return to the United States, he resumed the practice of the law, and devoted himself mainly to the management of cases before the Supreme Court, and it is not unlikely that he acted as "lobbyist" in relation to numerous bills that were brought before Congress. On only one occasion since his being a member of Polk's Cabinet, has he held office. During the administration of Buchanan, he was urged to accept the position of Governor of Kansas. He took the place after four had resigned, or had been removed, and continued in the office but a short time.

Although he owed his political elevation to the South, and notwithstanding a large portion of his personal friends espoused the Confederate cause, he was throughout the rebellion a consistent friend of the Union. Lately he has been employed to write articles pertaining to finance and other subjects for several of our magazines. These articles have been read with interest in this country, and many of them have been republished in England, where his views on free trade had made him many friends.

ART. IV.—THE INDUSTRIAL POLICY OF THE SOUTH.

We copy from the *Richmond Whig* an excellent article on the policy proper in the changed condition of the South. We cannot do better than present our readers with sound counsel from other advisers. The unanimous sentiment of those who would organize society for the present and for posterity points to the industrial policy which we have advocated, and which is so well sustained in the accompanying extract:—[Eds. Rev.]

The manufacturer of New England, or of the Central or Western States, who shall remove his family, his capital, his machinery and his operatives among us to engage in this business should be welcomed as a public benefactor, and should be favored by such legal privileges and exemptions as may be necessary to enable him to place his business on a stable and prosperous footing.

The importance of establishing factories, workshops, mills, etc., etc., in the South cannot be overestimated. Our own city, by reason of its geographical position, of its vast water power, of its contiguity to extended coal fields, and of its canal, river and railway lines, presents pre-eminent advantages as a manufacturing centre.

There is great activity in the building of cotton factories and railroads in the more Southern States. A Southern exchange stated, recently, that "almost every thriving town of three thousand inhabitants in Alabama and Mississippi is building a cotton mill." A large amount of Boston capital is said to be assisting in these enterprises. A correspondent of the New York *Evening Post* writes to that journal that "in Tennessee it is proposed to exempt from taxation the stocks of all new manufacturing companies started in that State." Earnest efforts are in progress for raising money by subscription to erect cotton factories at Corinth and Huntsville.

We recently spoke of the great advantage in having factories near the fields of production. Besides saving the expense of transportation, brokerage, storage, etc., there is the advantage of procuring the cotton directly from the plantation before being tightly packed into bales. The Philadelphia *North American* says: "The opening is so remarkable a one that we are not surprised at the prompt eagerness of the Bostonians to take advantage of it," and adds, that, "with any reasonable amount of care and diligence, their cotton goods are sure to command a preference in the markets of the world's commerce."

Instead of selling raw cotton to the North, and abroad, to be manufactured, the South should send cotton goods.

But it is not of cotton factories alone that we mean to speak. If we would build up our cities, increase taxable values, augment population, provide employment for hundreds and thousands of families, increase our trade, create capital to enable us to establish new railway communications, enable our business men to buy all that our farmers produce, and sell on good terms all they consume, make us independent of external communities, and give us self-sustaining power, we must turn our attention to manufacturing—especially must we do so in Virginia. Here we do not raise cotton, and there is so much the more reason why we should aim to appropriate and enjoy the profits attending its manufacture. In doing this we should also engage largely in other branches of manufacturing. Who will undertake to estimate the value to this city of the Tredegar Iron Works, and of the flouring mills in operation? How many mouths do they feed, how many families do they clothe, shelter and support? How much money do they put and keep in circulation? What amount of taxes do their proprietors and employees pay? Where is it that their products do not go? What would Richmond be without them? And what would not Richmond be if, in addition to them, she had millions of capital and thousands of employees engaged in other branches of manufactures?

It is the destiny of this city to be a great manufacturing centre, and we desire, as far as we can, to hasten the realization of that destiny. Virginia should be the manufacturing State of the South, and Richmond should be the manufacturing, as well as the political, capital of the State. We ought all to aim for the achievment of these great ends, and in starting out upon our new career we should cast aside all sore headed, selfish politicians, all men wedded to old systems, dogmas and prejudices, and take up progressive men, with enlarged and liberal views, who draw their inspirations from the present and the future, and not from the past, and whose politics are those of development and improvement.

If Virginia commences her new career under the auspices of the men of the past, who are the slaves of old prejudices, and who would keep her at war with those influences and agencies that are shaping the destinies of the country generally, she will continue to dwindle in power, wealth, population and consideration. If, under the leadership of such men, she raises her hand against the other parts of the country, their hands will be raised against her. She wants men at the helm who will attract friendship, not enmity, help and not antagonism.

ART V.—THE CONFEDERATE CONSTITUTION.

REASONS FOR DIFFERENCES BETWEEN IT AND THE CONSTITUTION OF THE UNITED STATES.

We find in a late issue of the *Memphis Appeal* the following letter, written in the spring of 1867, by the Hon. R. B. Rhett, in answer to certain inquiries addressed to him as to the authorship of the various alterations in the Constitution of the Confederate States from the Constitution of the United States. Mr. T. M. S. Rhett, to whom the letter was addressed, in a prefatory note, says: "In consequence of suggestions made to him, that the archives of the Confederate States, showing the formation of its Constitution, may never see the day, and that his statement, as made to me, had

better be published now, whilst the actors with him are alive, and can correct misstatements, if any there be, he has at length consented to my publishing his letter:"

CHARLESTON, S. C., April 15, 1867.

MY DEAR STUART—You request me to inform you whether I was not the author of all the alterations in the Confederate States Constitution from the Constitution of the United States. I answer no; but as I was the author of a part of them—perhaps the most important part—I will briefly state what clauses in the Confederate States Constitution I am responsible for.

You are aware, I presume, that I was appointed by the Convention the Chairman of the Committee to Frame a Permanent Constitution for the Confederate States.

The Southern States had seceded from the United States on account of one cause only—the usurpations of the Northern States upon the Constitution of the United States. Concerning the express powers granted by the Constitution there had been no contention. It was the inferential constructive powers claimed by the Northern States for the Government of the United States, which the Southern States had opposed as usurpations on the Constitution, beginning with bank, alien and sedition laws, tariff and internal improvements; finally concluding with slavery, and in sectionalism. We determined, therefore, to make the Constitution of the Confederate States simply the Constitution of the United States, as the South had always interpreted its powers, with only such alterations as would remove ambiguity, and better carry out its plain intents. The South was always satisfied with the Constitution of the United States. When, by usurpation on the part of the North, this whole instrument lost its character, and, from a limited Government, the Government of the United States was clearly lapsing into a limitless despotism, the Southern States seceded. They determined, by the Constitution of the Confederate States, to perpetuate the Government transmitted to them by their fathers. This is its whole purport.

The two great vital powers in all governments are the laying of taxes and the expenditure of taxes. These powers decide the character of every government, whether it is limited or unlimited, federal or consolidated; hence, from the commencement of the Government of the United States, strife arose as to the extent of its powers. The one party, chiefly at the South, contended that

power in the Constitution of the United States bestowed on Congress "to levy and collect taxes, duties," etc., was merely for revenue to carry on the Government of the United States. The other party, chiefly at the North, contended that this power should be exercised for a differnt and antagonistic purpose—to prevent importations on which taxes may be collected, and thereby promote and encourage different branches of industry by giving them the markets of the United States. The one party contended that the expenditure of the taxes should be limited to the exigencies of the Federal Government merely, within the objects designated in the Constitution. The other party contended that they should be expended to promote the general interest of commerce, and the indefinite general welfare of the United States.

1. At the head of the powers granted to Congress by the Constitution of the United States stands the following clause: Sec. 8, Art. 1: The Congress shall have power to lay and collect taxes, duties, imposts and excises, to pay the debt and provide for the common defence and general welfare of the United States." An attempt was made to alter the scope of this clause by taking away the comma at the word "excises," but on reference to the original manuscipt of the Constitution, the comma was shown to be correct.

To accomplish this object, when the clause was under consideration in the Convention, I offered the following prohibition as an addition: "But no bounties shall be granted from the treasury, nor shall any duties or taxes on importations from foreign nations be made, to promote or foster any branch of industry." This amendment was carried in the Convention. So the clause in the Confederate States Constitution, Art. 1, Sec. 8, is as follows: The Congress shall have power to lay and collect taxes, duties, imports and excises for revenue necessary to pay the debts, provide for the common defence, and carry on the Government of the Confederate States; but no bounties shall be granted from the treasury, or shall any duties or taxes on importations from foreign nations be laid to promote or foster any branch of industry."

2. The appropriation of money from the treasury of the United States for the purpose of internal improvements had been, for more than thirty years, one of the great disputed usurpations which the South opposed, and had been repeatedly arrested by the vetoes of different Presidents. It had been claimed chiefly under the power granted in the Constitution of the United States to

Congress to "regulate commerce with foreign nations, and among the several States, and with the Indian tribes." When this clause was reported by the committee in the permanent Confederate States Constitution, as it stands in the Constitution of the United States, and came up in the convention for consideration, Mr. Toombs, from Georgia, offered the following amendment: "But neither this nor any other clause contained in the constitution shall be construed to delegate the power to Congress to appropriate money for internal improvements, intended to facilitate commerce.' I had prepared an amendment very much to the same purport, but abandoned it, and supported this offered by Mr. Toombs. After considerable debate, Mr. Toombs withdrew the amendment. I immediately arose and offered it as an amendment. On the vote being taken, it was carried as a part of the constitution of the Confederate States, as follows:

"To regulate commerce with foreign nations, and among the several States, and with the Indian tribes; but neither this nor any other clause contained in the constitution shall ever be construed to delegate the power to Congress to appropriate money for any internal improvement intended to facilitate commerce."

3. But there was yet something more to be done with this clause to make it complete. A method ought to be provided by which our harbors and rivers might have their navigation improved. I accordingly drew up and read to the convention (its presentation at that time not being in order) the following additional amendment; "Except for the purpose of furnishing lights, beacons and buoys, and other aid to navigation upon the coasts and the improvement of our harbors, and the removing of obstructions in our river navigation, in all which cases such duties shall be laid on the navigation facilitated thereby, as may be necessary to pay the cost and expenses."

After I had read this amendment to the convention, and explained its operation, Mr. Marshall, of Louisiana, came to my seat, and expressed his approbation of it, and asked me to let him take a copy of it for consideration. I told him to take the amendment and offer it himself, as an amendment to the constitution. He took it and the day after offered it as an amendment to the constitution, and it was adopted. The whole clause, as modified, stands in the Confederate States Constitution, Article 1, Section 8, Clause 3, as follows:

"To regulate commerce with all foreign nations, and among the several States, and among the Indian tribes; but neither this nor any other clause contained in the constitution shall ever be construed to delegate the power to Congress to appropriate money for any internal improvements, intended to facilitate commerce, except for the purpose of furnishing lights, beacons and buoys, and other aid to navigation upon the coasts, and the improvement of our harbors, and the removing of obstructions in our river navigation, in all which cases such duties shall be laid on the navigation facilitated thereby, as may be necessary to pay the costs and expenses."

4. The election of a President every four years, and the abuse of the official patronage of the government that the elections produced, were great evils under the Constitution of the United States. The re-eligibility of the President was not without danger, as the re-eligibility of the Consuls of Rome opened the way to the Roman Empire. I brought up this subject before the committee preparing the constitution, and proposed the extension of the term of service of the President and Vice President of the Confederate States to six years, and that the President shall be ineligible to the presidency after his term of service expired. But I submitted, also, to their consideration that the same end might be obtained by making the *existing* President ineligible after an intervening term of service of six years had taken place. By this policy, the President would have no motive to use his patronage in the election, and the services of a very able man might be obtained for a second term. This latter view was favored by the committee, and I reported the clause to the convention, accordingly, with a six years' tenure of office. But when it came up for consideration in the convention, Mr. Boyce, of South Carolina, moved to strike out the conditional re-eligibility. As this made the clause as I had originally proposed it in committee, I expressed by approbation of it, and voted for it with the majority which adopted it, as follows: "Article 11, Section 1.—The Executive shall be vested in a President of the Confederate States. He and the Vice President shall hold their offices for the term of six years," but the President shall not be re-eligible.

5. To make ability and worth the sole criterion for holding office, and to prevent the corrupt use of the official patronage of the Government in elections, I offered in the committee the 3d Clause,

2d Section, Article II, of the Constitution of the Confederate States, which was adopted by them, and, with unanimous consent, was also adopted by the convention: "The principal offices in each of the 'executive' departments, and all persons connected with the diplomatic service, may be removed from office at the pleasure of the President; all other civil officers of executive departments may be removed at any time by the President, or other power, when their services are unnecessary, or for dishonesty, incapacity, inefficiency, misconduct, or neglect of duty; and, when so removed, the removal shall be reported to the Senate, together with the reasons therefor."

6. Amendments to the Constitution of the United States proved to be so difficult in the course of its administration before the ward that it amounted to prohibition. Since the war, the country has been in a condition of revolution, and practically with no constitution but the despotic will of a Congress of a part only of the States. I proposed in the committee the 5th article of the Confederate States Constitution which, both by them and the convention afterward, was unanimously adopted as a part of the Constitution of the Confederate States. If it had been a part of the Constiution of the United States, the vast discontent which preceded the war, and made it inevitable, would have been easily arrested and allayed; and the States assembled in convention would have settled amicably all their differences. It reads as follows: "Upon the demand of any three States, legally assembled in their several conventions, the Congress shall summon a convention of all the States, to take into consideration such amendments of the constitution as the said States shall concur in suggesting at the time when the said demand is made; and should any of the proposed amendments to the Constitution be agreed on by the said convention, voting by States, and the same be ratified by the Legislatures of two-thirds of the several States, or by conventions of two-thirds thereof—as the one or the other mode of ratification may be proposed by the general convention—they shall thenceforward form a part of this constitution; but no State shall, without its consent, be deprived of its equal representation in the Senate."

I have thus, I hope, satisfactorily answered your inquiry.

Yours, truly, R. Barnwell Rhett.

T. M. S. Rhett.

ART. VI—LOUIS NAPOLEON AS A MODEL FOR THE SOUTH.

BY W. M. BURWELL.

The Southern States have based their ideas of political freedom upon the demonstration of certain abstract ideas. To explain these ideas they relied upon the authority of the venerated dead or the genius of the gifted living. To maintain these ideas they employed a single mode of industry, that of agriculture and a single institution of labor—it was bondage. They were driven to defend these ideas by arms. The proposition at issue on the field was the sovereignty of a State, qualified alone by its own concessions. For this doctrine and its consequences the writer avows his responsibility according to the measure of his humble agency. War, upon argument as exponded by those weighty commentators, Parrot, Dahlgren, Sharpe and Spencer, decided that the right of one or more States to determine on the mode or measure of their redress does not exist now under the Federal Constitution. Whatever may be the opinion formed by the world upon the merits of the controversy, it is indisputable that the Southern States having relied on a single interest, and having rejected commerce, the mechanic arts and material developement, as agents for maintaining their doctrine—having one-third of its population who could not be entrusted with a gun—having fought the abstract against the practical, obstruction against progress, chivalry against capital and numbers, the war-club and arrow-spike against Spencer's rifle and the Columbiad, surrendered to the superior military system of her antagonist. It may well have happened that a doctrine has been annihilated without involving its refutation—for war is one of the mechanic arts. It is a simple question of dynamic force—nothing more. It is an

equation involving certain constant quantities; symbolized the relative numbers, arms, munitions, food, clothing, equipments and transportation of the combatants, and the result of a war may be worked out with as much certainty as any other physicial proposition. But the appeal to war is conclusive and the right of the State exists no more. We live under a pure democracy, in which numbers make, adjudge and execute the laws. We must accommodate our system to the state of affairs which surrounds us. We must offer attractions to numbers. We cannot afford to await the slow increment of native population nor the tedious accumulations of disorganized industry. We require the immediate immigration of ready made men and women, the immigration of foreign capital, the organization of domestic manufactures and of foreign commerce. We must acquiesce in, adopt and employ the agencies which have subdued us.

In this adoption and organization the South needs an example. It will not be taken from the Northern States, because, whilst the adoption of that system from European models by the North can constitute no objection to the speaker or audience, it is well to divest a subject of such importance of all prejudice. It is well to show that all the most enlightened powers of the world have adopted this system, that whilst France, England, Germany, and even Italy, Austria and Russia are competing, in all the elements of material power, the Southern States have been almost the only highly civilized and renowned people of modern times who have been indifferent to this system. The example, then, of Louis Napoleon, wil show the South that the liberties of a nation depend upon its abili ty to maintain them, and this ability upon the progress of the nation in religion, literature and the arts.

The first Napoleon was gifted with a genius never equalled in its powers or comprehension. He had achieved unequal greatness; he had broken up the arctic rigor of European usage; hehad liberated ideas; he had overthrown dynasties; but his fame was incomplete. He leaped at a consummation and fell countless fathoms below his object. The Bourbon could not drive the chariot Napoleon had placed upon the course. He was thrown and dragged around the horizon and the coursers ran with loose reins. They were seized in mid career by a spirit akin to his that had trained them.

There have been many cases in human history where men of genius have risen from humble station to empire; many in which such men have founded thrones, but very few in which dethroned, dead and childless, a legitimate successor has been overthrown and the crown restored to the family of the founder by the accession of a collateral scion, who owes his elevation to his own merit. Such has been the history of the Napoleonic dynasty.

Louis Napoleon conceived and proclaimed the maxim that the Empire was Peace. He proceeded to explain this axiom. He employed the people. He educated the people—acting on the theory that the strength of a nation depends upon its numbers and wealth. He examined the popular caapcity by schools. Each individual was trained to public usefulness, according to the measure of his or her capacity. From the humblest operative to the most enlightened *savan*, all were employed. The poorest peasant boy or girl who manifested an ability to aid or illustrate the State, found the means in the workshop, the *Conservative* or the studio to develop the fullest capacity for excellence. The artizan or the inventor knew the hand of the State ever ready to raise him to position when his qualities could be seen and appreciated.

He perceived the want of all elements of political, military power. He hastened to supply them. There was a scarcity of metals and minerals, of timber, of animals. Forthwith he organized the most perfect supervision and development of all these interests, bureaus of education, internal and foreign commerce, mines and minerals of lands. These were organized in detail, and appropriations made to carry out the instruction and improvements necessary to their success.

There was a want of internal communications. His systems, both by *reseau* and strategetic, became the most perfect in Europe.

Let us, however, give his own idea of true Empire, derived from his own words. They are taken from his State papers;

Translated from La Politique Imperiale, Paris, 1865.

INAUGURAL SENTIMENTS.

"A faithful servant of the people and the country, I will never have any other object than to reconstruct in this great country, so torn by so many controversies and by so many visionary projects,

a peace based upon popular condition and upon the inflexible principles of authority, morals and love for the laboring and suffering classes.

"If there be men who do not comprehend their epoch I am not of the number.

He said: "The Emperor had the same idea with himself—to maintain his power by the development of the country.

He says: "Thus, the principle duty of government is, to diminish as much as possible, the burdens which weigh upon labor. In spite of the sophistries intended to deceive the people, it is undoubted that this principle in Switzerland, America and England produce the most invaluable results. It liberates production and does not impose upon the consumer.

"To simplify the forms of administratiou and to modify the legislation applicable to classes worthy of our solicitude will be a progress of which we may well be proud.

"Called to the throne by Providence and the will of the French people, but a pupil of the school of adversity, it is not proper that I should forget either the right of a sovereign or the legitimate aspirations of the people.

"The world thinks I am one of those who dream only of empire and war. I wish to found a republic wise in its laws, honest in its intentions, grand and powerful in its deeds.

"The want security in the present and faith in the future destroys credit, arrests labor, dimininishes public revenue and private income, renders loans impossible and dries up the sources of wealth.

"The degree of civilization in a country manifests itself in the progress of industry, of science or of the arts.

"What is better than conquest, we have acquired titles to the sympatpies of the people without having lost the confidence or esteem of governments.

"It is my duty to maintain the civil authority, which, since the days of St. Louis, has never been abandoned.

"Our guard and our guide is faith, political and religious faith, confidence in God and the mission which I have accomplish.

"The first necessity of a country is stability. Liberty has never aided to found a durable political edifice. She comes to crown when time has consolidated it.

"It is the duty of government to inculcate sound principles of political economy. It should promote all which tends to improve this condition of man. But the chief blessing it can give, that which surpasses all others, is to establish a good administration, which shall earn confidence and secure affection."

TRUE EMPIRE—SPEECH TO THE CHAMBERS.

"Civilization, which has for its object the moral amelioration and the material welfare of the greatest number, marches, it must be remembered, as an army. Its victories are not obtained without sacrifices and victims. The speed which facilitates intercommunication opens to commerce new routes, overthrows the interests of and leaves behind those countries which are without such facilities. Those useful machines which multiply the labor of men, though leaving unemployed many hands, soon replace the industry which it has interrupted—those mines which pour over the earth a supply of corn unknown until now. This increase of public wealth which enlarges consumption an hundred fold tends to vary and increase the value of everything. That inexhaustible source of riches which they call credit gives birth to wonders, though very often exaggerated speculation brings individual ruin. Hence the duty, without arresting progress, of coming to the aid of those who cannot keep up with her rapid march.

"You have commenced the restoration of public health by a gigantic enterprise of subterranean galleries worthy the labors of ancient Rome. You have combined with the useful all that could delight the eye and inspire noble sentiments. We shall soon see the great highways of trade opened, the crowded districts made healthy, the rents reduced by the multiplicity of new houses, workmen enriched by industry, misery diminished by a better organized charity, and Paris advanced further towards her high destiny.

"The world has seen France, who sent 200,000 men across the sea, assemble at the same time at Paris all the arts of Peace, as if she had wished to say to Europe; 'The existing war (with Russia) is no more to me than an episode. My ideas and energies are directed

in part always to the arts of Peace. Do not misapprehend me, and do not force me to display upon the field of battle all the resources and all the energies of a great nation.' "

"In regard to our public works results are more important. 1330 kilometres of road were opened in 1857, 2600 chartered or projected; the basin of St. Nazaire and the Canal of Caen on the sea are open to navigation; the preliminary examinations have been made to put a stop to inundations, the improvement of your ports, among others of Havre, Marseilles, Toulon, Bayonne, on the north and west of France, the exploration of new coal mines; at Paris the inauguration of the Louvre and the Asylum of Vincennes; in Lyons the city opened for the first time in centuries to the air and light."

His object is to establish a government based on the will and interests of the people;

"The moment is come when we should occupy ourselves with the means of impressing a great influence upon the different branches of the national wealth—prepare measures proper to give active impulse to agriculture, industry and commerce.

"For a long time it has been proclaimed as a truth that the subjects of exchange must be multiplied to render commerce prosperous, which must, without the concurrence of industry, remain stationary and maintain the high prices which oppose the progress of consumption—that, without a prosperous industry, which developes capital, agriculture itself remains in its infancy. Everything, then, is involved in the successive developement of the elements of public prosperity! But it is an essential question to know within what limits the State can promote these interests.

"What, then, is empire? Is it a retrograde movement—the enemy of light—desirous to restrain all generous impulses and to extinguish in the world the peaceful splendor of civilization? No—the Empire has inscribed these principles at the head of its Constitution. It adopts freely all that can ennoble the heart or exalt the courage.

"Thus, I delight to proclaim aloud, that the time of conquest has passed, without return, for it is not by extending the limits of its empire that a nation can become honored and powerful, but in ad-

vancing generous ideas, in establishing everywhere the empire of right and justice.

"If France is not homogeneous in her population, she is unanimous in her sentiments. She prefers a government sufficiently stable to defeat all efforts at revolutions; sufficiently enlightened to favor true progress and the development of the human faculties; so just as to call around it all honest men, without regard to their political antecedents. Finally, a government so strong in its internal union as to be respected as it should be in all the courts of Europe.

"In a spirit of defiance certain men have said, 'The Empire—it is war!' I assert, 'The Empire—it is peace!'

"I am convinced that I, as well as my predecessor, the Emperor, have *my* conquests to make. I wish, as he did, to conquer the approval of my opponents, and add anew to the great current of popular will the streams of discontent which have wasted themselves without profit to any one.

"I wish to conquer to religion, to morality, to happiness. There is a large population in the midst of this land of hope and faith, that scarcely knows the truths of christianity, and, in the midst of the most fertile soil in the world, scarcely obtains the necessaries of life.

"We have a large extent of country to reduce to cultivation' roads to open, ports to improve, rivers to render navigable, canals to complete, and a system of railroads to construct. We must assimilate to France the vast territory which we have conquered, and which lies opposite Marseilles.

We must connect our ports with America by rapid means of communication. We have, all around us, ruins to rebuild, false gods to throw down, truths to make triumphant.

"This is my interpretation of 'empire.' Such are the conquests I contemplate, and you, representatives of the people, who surround me, and who wish also the welfare of your country—you are my soldiers.

"The developement of public education should next merit your solicitude. In a country of universal suffrage every citizen should know how to read and write.

"I endeavor every year to liberate labor from those restrictions which have so long restrained it. By the law of last year against combinations, those who toil and those who employ them are advised

to adjust their differences without appealing so often to government interference. Government is incapable of regulating the variable relations between demand and supply. New projects have been submitted to give greater support to associations, and to withdraw the responsibility of government, always inefficient."

President Johnson's ideas of the Freedmen's Bureau are very similar to these:

"The recess of the Legislature has been employed in seeking the means to increase the moral and material welfare of the people, and any useful and true idea is certain to be encouraged by me and adopted by your body.

"Let us, then, examine together the measures proper to increase the prosperity of the Empire. Religion and public instruction are objects of constant solicitude to me. All modes of worship enjoy equal liberty. The Catholic clergy exercise a legitimate influence even beyond their sacred functions. By the laws of education it superintends the instruction of youth. By the electoral law they may enter the public councils, and by the Constitution they may become members of the Senate.

"My policy has been very simple. It has been to increase the prosperity and moral ascendency of France, without abusing or abandoning any power which has been entrusted to my hands.

AGRICULTURE.

"From the rise or fall of agriculture dates the rise or fall of empire. We must improve our agriculture and set our industry free from all internal restrictions which impair its efficiency.

"In regard to agriculture it must participate in the blessings of credit. We must cut down the forests on the plains and replant the mountains with timber. We must annually appropriate a considerable sum to drainage and irrigation. These labors, transferring waste districts into cultivated lands, will enrich the communities without impoverishing the State, which will replace its advances by a sale of a portion of the lands thus reserved."

He censures the restrictions which surround individual enterprise. Approves societies intended to alleviate the condition of the working class.

"The facility of foreign and domestic intercourse promotes exchanges, stimulates industry and prevents either scarcity or surplus

of productions, a consequence injurious alike to the producer and consumer. The more our maritime interest increases, the more transportation is promoted, the less we shall complain of the sudden changes in the price of articles of prime necessity.

"Thanks to a liberal legislation, from these material changes is born an exchange more precious still—the exchange of ideas. If foreigners can envy us many useful things, we have much to learn from them."

He employs the conquerors of Algiers in making railroads, so necessary to the developement of the prosperity of the colony; fulfils the Imperial donation of Napoleon by a grant of several millions to the old soldiers. *Et moi aussi Je faisais partie de la grand armie.*

HIS MORAL POLICY.

In the midst of material developement, religious, moral and mental improvement have not been neglected. Religion, works of benevolence, arts, science and public instruction have received liberal encouragement. Since 1848 the pupils have increased more than one fourth in number. There are more than 500,000 children in the primary schools, more than one-third of whom are instructed gratuitously. There are, however, six hundred thousand who still require instruction.

HIS MARRIAGE.

"One woman alone has seemed to bring happiness, and to live more than any other in the memories of the French people, and this woman the good and respected wife of General Bonaparte, was not of the blood royal. Eugenie will, I firmly believe, revive in the same position the virtues of the Empress Josephine. I announce to France that I prefer a woman whom I love to one whose alliance would bring advantages mixed with sacrifices." In thus uniting himself with one who does not bring political alliances he says, "I shall not be less strong because I shall be more free."

THE AMERICAN WAR.

"The situation of the Empire would be flourishing if the Amerin war had not dried up one of the most productive sources of our venue.

"This inevitable stagnation of labor has occasioned on all hands a misery worthy of all our solicitude, and an appropriation will be asked in aid of those who support with resignation a misfortune which it does not depend on us to terminate. Nevertheless, I have tried to bring to bear on this side of the Atlantic counsels inspired by a sincere sympathy, but the chief maritime powers, not believing it expedient to unite with me, I have thought it best to postpone to a more propitious period an offer of mediation, which only had for its object the prevention of the effusion of blood and the exhaustion of a country whose future we could not view with indifference.

RIVALRY WITH ENGLAND.

"I congratulate you upon your energy and perseverance in having engaged in rivalry with a nation which had surpassed us in certain branches of industry. This realizes that formidable invasion of British soil so long predicted! You have crossed the straits. You have courageously established yourself in the capital of England. You have bravely striven with the veterans of industry. This campaign has not been without glory, and to-day I bestow upon you the reward of your prowess.

"This kind of war, which has no victims, has more than one merit. It excites a noble emulation. It developes those traits of commerce which reconcile nations and banish international prejudices without weakening the love of country.

"Let us, then, employ ourselves in all which can at the same time improve the material condition of the people and elevate their morals. Let us place before our eyes always a noble object and the example of those who have conquered fortune by labor, respect by integrity, and glory by courage.

"The memories of Auges" remind him that "France may still be great by arms. But there is a glory just as great. It is to oppose all civil and foreign wars and to grow in progress and greatness by our industry and commerce.

"Peace will be dear to my heart. France has been a warrior because she was forced to be so. She has responded to invasion by conquest. A great nation should be silent or never speak in vain.

"In the middle ages the king inhabited a fortress surrounded by defences. Very soon the progress of civilization replaced redoubts

and bastions and armies were substituted by science, letters and the arts."

THE MECHANICAL INTEREST.

Louis Napoleon seems early to have comprehended the value of the mechanical interest in directing the destinies of a people. No doubt the crowned heads were under the impression that his interest in their wellfare, manifested by Technical and Polytechnical schools, workshops, cheap rents, abundant food, light, air and recreation to the workmen, proceeded from the arts of a demagogue. The return which this interest has made in the production of wealth for France vindicates at once his sincerity and his wisdom.

Thus he says:

"My constant effort has been to obtain relaxation to the laboring classes. In this view the Empress" (who partakes of his views) "has founded an institution to furnish capital to honest and industrious mechanics, and will disprove the old proverb, 'the rich alone borrow.' If, as I hope, this institution shall succeed, it will be gratifying to think that a good character and undoubted propriety of conduct offer sufficient advantages and guarantees."

He calls the new Boulevard after Prince Eugene:

"The names inscribed upon the marble do not belong to my family alone, but to all those who have rendered service to the country. Thus, the new way of communication which replaces the Canal St. Martin, will be henceforth known as the Boulevard Richard Lenoir.

"Although there was already a small street by this name, I desired to display, in a more prominent light, the name of one who, from a simple mechanic, became one of the largest manufacturers of France, who the Emperor decorated with his own hand for the immense advance which he had made in the manufacture of cotton, and who employed a fortune nobly acquired to support his workmen in a period of distress and armed them when it became necessary to repulse a foreign invasion.

"That which gives incredible force to the humblest man is to have before him a great object to attain, behind him a great cause to defend.

"The more we advance, the more (as the Emperor, Napoleon the First, said) the trades become arts, and learning itself becomes an object of utility.

"At this day our great enterprises are not only embarrassed by a web of restrictions, but the comfort of the workman is far from being equal to that of his competitor in other countries. There can be nothing, then, except a good system of political economy, which can, in the creation of the wealth of a nation, increase the comfort of the laboring classes.

"To encourage industrial production we must relieve from any burden all material indispensable to the purposes of industry, and bestow upon it, subject to an occasional and moderate tax, the capital which will aid in bringing it to perfection.

"To enable the people, who have been consolidated into one community, to participate equally in the advantages to which they have contributed, certain local improvements will be necessary. The tolls are repealed on the Saone and Rhine—it is for the benefit of workmen. This will remove a deplorable inequality, which dissatisfies a portion of the people.

"Fortifications are no longer necessary against domestic disturbances. The workmen of Lyons are sound. I desire to replace the wall built to collect taxes with a place of public recreation. It will be a desirable proof of my confidence in the good sense and patriotism of the Lyonese. Lyons has been protected against inundation. Wide streets have been opened in the midst of the city. The bridges across the Rhine have been opened to free passage.

"The management of internal communication by multiplying the subjects of exchange will result as a consequence of these measures. The systematic reduction of taxes upon all articles of prime necessity will follow, as will also the substitution of protective rights for the prohibitive system, which now limits our trade with foreign countries.

"By such measures agriculture will find the current of its products increased, industry will be freed from internal restrictions, and aided by the Government, and stimulated by assistance, it will strive successfully against foreign precedents, and our commerce, instead of languishing, will receive a new impulse."

INUNDATIONS.

He treats this subject as an engineer:

"Supposing that the Rhine or the Loire were two great affluents. Now, if we suppose a valley two leagues in width and four in length, upon which there falls, in two hours, 0.10 centimes of water, we will have 12,800 cubic metres of water. Thus, we should have the immense quantity of 128,000,000 cubic metres, which will join the river in twenty-four hours.

INTERNAL COMMERCE.

"One of the highest services you can render a country is to promote the transportation of material of prime importance to agriculture and industry. With this object the Minister of Public Works will construct, as expeditiously as possible, common roads and railroads, to bring stone, coal and fertilizers to those points where the necessities of agriculture require them, and he will compel the reduction of charges by the canals and railroads, thereby promoting the usefulness of these modes of conveyance.

RAILROADS.

"The opening of a railroad is always a national celebration in which I am happy to assist; but a road from Paris to Strasbourg is an event important in my eyes because of the plains which they traverse.

"In seeing Chateau Thierry, La Ferte, Epernay, one retraces the heroic struggles of the Emperor against the coalition of all Europe. And I have said to myself—'If this road had existed—if the Emperor Napoleon had known the use of steam, we should never have seen strangers invading the capital of France.'

"Honor to the railroads, since in peace they develope commercial prosperity and in war contribute to maintain the independence of the country.

PACIFICATION POLICY.

"I have wished on the one hand to efface, by a complete amnesty, as much as was in my power, the memory of our civil discords, and on the other, to increase the power of the nation."

Napoleon has had political disturbances in France. They have grown out of the politics of parties and dynasties. These demonstrations were put down and the malcontents at his mercy. He opened the prisons and liberated 1570 political *detenus* and discharged from the galleys a number of political offenders. Upon that occasion he said:

"Government should set at liberty the victims of our civil discords. Public opinion is disturbed by the mere mention of the word amnesty. Many feared the return of new troubles as the result of his lenity. He had employed indulgence when it would not pardon mischief. Restored confidence was the result of this policy, and the savings' banks were filled with the deposits of assured stability."

Such has been the domestic policy of this distinguished ruler. It has shown that the strength of an empire depends upon the preservation of peace. We shall next proceed to show that his foreign policy was directed to the same objects and has produced the same successful results.

(TO BE CONTINUED.)

ART. VII.—CRITIQUE ON BERTHOLD AUERBACH'S "VILLA ON THE RHINE."

BY MRS. S. A. DORSEY.

There has arisen recently in the United States a war in enthusiasm for German literature, springing from the impetus given originally to the study of that tongue by such men as Coleridge and Thomas Carlyle in England. Twenty years since, few people knew anything about German literature. Now it is considered an essential of polite education to be familiar with, at least, its master works, even if through the medium of translation. German thought is fashionable just now. The Northern press teems with translations from the German. In some aspects one may not wonder at the eager readiness to receive the fruits of German intellect on the part of the American mind. The literature of no other people would furnish the novelty and supply us with

fresh sensations like that of the German; it is so entirely unlike our American thought. Founded upon antiquity, and a fixed organization of society—at once the most ceremonious, and yet the most homely; perhaps the frankest, simplest and least affected of all literatures—it has a boldness of reasoning, a logical analysis of facts, a resume of research and stupendious learning, that is extremely attractive to so rapid and so superficial a nature as ours. Its enthusiasm warms us, blase as we are, and we admire its daring flights, its scholarship overpowers us, and its very vagueness is pleasing to us. For, on every side, shut in by his limited senses, man likes to lose himself in the infinite, when he can do so. And the hasty, hard, practical, money-making American finds rest in the fantastic dreams and wonderful imaginations—the sublime philosophy of the German mind.

It is probable that the mass of readers in the United States know little, as yet, of German literature beyond the novels recently translated of Muhlbach and Auerbach. We have not space here to discuss the interminable Muhlbach series; but we wish to say a word in regard to Auerbach's latest work, "The Villa on the Rhine, or, Villa Eden," which has been heralded and reprinted in America, with much pomp and parade of welcome. We do not ourself class Auerbach so high as Freytag or Gutzkow. Nothing that we know, so far (in the original tongue) of Auerbach is comparable to Freytag's "Sollund Haben," or his "Lost Manuscripts," or to any of Gutzkow's fine works—the "Magician from Rome," or the "Spirit Knight." Freytag has an exquisite and playful humour, which dances in gayest coruscations of tender mirth over everything. A little corner of Jean Paul's mantle has fallen upon him. Gutzkow excels in the use of his fine Damascus sword of sarcasm and keen irony—the blade which was already sharpened for him by Heine and that school of writers. Auerbach compares unfavorably with either. But Auerbach has power—dramatic power—of his own. He writes artistically, and "feels the clues" to the mind of his public. He is not so honest a writer as either. He writes with the remembrance of his public before him, and he writes to please *them*, to catch *their* ear. This is unworthy of a great author. Goethe nor Schiller would have ever done this; and

what aggravates this fault in Auerbach is, that he makes bold claim and fair pretence at the broadest philosophy and highest truth. He assumes the cloak of the stoic; but he has not the steady eye in truth that would have pleased Zeno, or even Socrates, with all his studied amiability and charity. Auerbach has made money in America, and he has written—we are sorry to see it—he has written Villa Eden to pander to the prejudices of the North. He attempts to touch again the chords which Mrs. Stowe made to vibrate so loudly in "Uncle Tom's Cabin." The day for that is past. It is unworthy of Auerbach to attempt now to continue to heap obloquy upon a defeated and sorely suffering and oppressed people. To talk at this hour of "Southern barons," and the "cruelties of slavery," is simply cowardly; to insult a helpless people is unmanly, unworthy. We repeat it, *unworthy* of a man crowned by God with genius for the elevation and solace of broad humanity. Auerbach takes as his hero an ex-slavetrader, by the name of Lonnenkamp, who amasses a great fortune, and goes back to Germany to spend it, building himself a fairy palace on the Rhine, which he calls "Villa Eden."

Auerbach draws a masterly sketch of the usually accepted portrait of a slave-trader or slave-owner—a sort of strong, piratical nature, with a somewhat incongruous love for flowers and for his children. It reminded us of Count Fosco's sugar plums and white mice—this traditional character, who is as well known in fiction and drama as "Pollichinello and the Pedant"—and is well sustained throughout the whole long three volumes. This modern Antæus dies at last on a battle field in Virginia, holding a heath flower—an erica—(we wonder what kind of "erica" is native in Virginia?) in his hand. The tragic crisis in the book comes on at the moment in which Lonnenkamp is refused an "order of nobility" by "the prince." We cannot judge of the importance and harrowing interest of this circumstance, not being accustomed to "orders of nobility," and, perhaps, not even appreciating the inestimable bliss of being smiled upon by a "prince;" so, of course, we do not sympathize as much as we ought with this climax of despair for Lonnenkamp, nor with the great universal indignation of "the nobility" at the slavetrader's seeking to be numbered

among that privileged class; because we Southerners, though not presuming to be as educated and learned as either the German or New England people, have yet been, to some extent, readers of history, and we thought that, a few hundred years ago, all the German nobility, and French and English, too, were slaveholders, slavetraders, and, if history tells any truth, terrible slave oppressors. But their slaves were white, and their own countrymen, which *does* make a difference, perhaps, in the Southern favor. It would be, perhaps, of some value if writers who attack a whole people would inform themselves first of their own antecedents, and of the actual circumstances of the people they attack. If there was sin in slavery, the South is not responsible for that sin; but the North and England, who forced slaves upon unwilling colonies. We were never slavetraders, and never owned slave ships. The North mended all that for us. We were, pre-eminently, an agricultural people. We accepted savage slaves, and made civilized Christians of them—nay, more, four millions of citizens and legislators for the United States. At this very day none of the guilt, and all the glory, of a great mission work is ours. We did not like "slavetraders," even internal slavetraders. Lonnenkamp says: "However, I soon learned to esteem these Southern gentlemen; they were hypocrites; they held slaves, and yet looked down upon the men who imported them!" That is true, because a Southern planter *never* sold his slave except from *dire necessity*. We were bound together by other ties than those of fetters and the lash. We were human beings, not monsters who had seized a free peasantry (as the German nobility did), and made them into slaves, or "coloni." We had accepted an evil and turned it and modified it into a good. The emancipation of the slaves released *us* from an immense responsibility, though we believe it sounded the knell of the negro race here. But, again, in the working of events, *we* are spared the guilt of having sounded that knell. The "Southern barons," from the beginning to the end, have been the unvarying friend of the colored races. Whether black or red, we have degraded, killed, oppressed no people, but we have elevated and civilized a whole people. It is not we, even to-day, who hunt the Indians down upon the prairies. We have fought but twice—both

times for what we believed our inalienable rights—and we fought white men, and our peers. It is a mistake in any author to write from hearsay or conventionalized pictures of any people! The world sits always in judgment upon us, from the pleadings solely of our adversaries—the men who did the crime—if it was a crime, who charge us with fearful consequences which never were. We are neither more nor less than human. In our lives there has probably been injustices, errors, mistakes, as there is in all human societies. But we are and have ever been a kindly, gentle and moral agricultural people, who have prospered because we did care for our flocks, our herds and our *slaves*. Auerbach has prostituted his noble intellect in pouring obloquy upon us, and in grossly pandering to the already inflated pride of the North. We are sorry for it. Apart from its plot and chief characters, this book contains much interesting matter, gives a curious insight into German life and customs, and also gives utterance to much good philosophy and words of practical sense. There is much dramatic skill betrayed in it—almost too perceptible are the *coups de theater*. We heartily wish Herr Auerbach a better subject for his next novel.

"The Girls of Feversham:" Florence Marryat; written with some power; characters of the women kept distinct; rather sarcastic; from a feminine point of view, the hero is not unnatural, nor unfrequently to be met with. More intellectual men than Lord Augmeung are often fascinated by "Baby Ripleys," with pretty doll faces and little sense of any sort. The character of Mary Pelham is good, and that of farmer Ripley is strongly outlined. The book is not altogether pleasant, but contains some true pictures of life. It is rather sad and somewhat bitter.

"The Lost Manuscript:" Gustav Freytag; an excellent transcription of Freytag's very admirable novel, by Mrs. Malcolm. It is both a pleasure and a benefit to read anything from the pen of Freytag. He is both able and moral. The plot of this novel turns upon the discovery by a German professor, Werner, of traces of the lost books of Tacitus. The pursuit of the lost manuscript brings him into intimate relations with the proprietor of the Castle Bielstein, in which the treasure was hidden, and he marries the daughter of the house. There are very valuable descriptions of German life and character interwoven in the story. The character of Ilse is noble, and one gets a glimpse of university life, as well as that at a petty court. We would be tempted to make extensive

extracts from this book, if our space would allow. The conversation between Ilse and her husband, upon pages 104 and 105, breathes the noblest and grandest morality. The Professor says to his wife, "You are not only what you consider yourself—a human being, born to joy and sorrow, united to individuals by nature, love and faith—but you are bound, body and soul, to an earthly power of which you think but little, but which, nevertheless, guides you from the first breath that you draw to the last gasp of life. When I tell you that you are a child of your people, and a child of the human race, the expression will come so naturally to you that you will not assign to it any signification. Yet this is your highest earthly relation. We are too much accustomed, from our childhood, to cherish in our hearts only the individuals to whom we are bound by nature or choice, and we seldom think that our *nation* is the ancestor from whom our parents originated; that has produced our language, laws, manners and acquisitions, everything that composes our life, and almost all that determines our fates, and elevates our hearts.

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"All have lived, suffered and worked together in order that you may live, enjoy yourself and do your part in life.

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"The great net, in which your life is one of the meshes, is woven together from an endless number of threads, and, if one fails, the net is imperfect. Apply this first to little things. You have to thank the inventions of a period (of which every record is now wanting) for the table by which you sit, for the needle you hold in your hand, and the rings on your fingers and in your ears; the shuttle was invented by an unknown people in order that your dress might be woven, and a similar palm leaf pattern to that which you wear was devised in the manufactory of a Phœnician.

* * * * * *

Not that alone; what you know and believe, also, and much that occupies your heart, has been delivered to you, through your nation, from foreign sources; every word that you speak has been transplanted and remodeled through hundreds of generations, by which it has received that sound and significance which you now use so carelessly. It was for this object that our ancestors came into the country from Asia, and that Armin struggled with the

Romans for the preservation of our language, that you might give Gabriel an order which both could understand. It was for you the poets lived, who in the south of the Hellenic people invented the powerful rythm of the epic verse, which it gives me such pleasure to hear from your lips. Further, that you might believe as you do, it was necessary that, three hundred years ago, there should take place in your fatherland the grandest struggle of thought; and again, more than a thousand years earlier, a mighty striving of the soul in a small people in Asia; and again, fifty generations earlier, still venerated commands given under the tents of a wandering desert people. You have to thank a past which begins with the first life of man on earth for most that you have and are, and in this sense the whole human race has lived, in order that you may be able to live.

"But how does that agree with this same man being a nonenity, and crushed like a worm in the great events of your history?

"As you are the child of your nation and of the human race, so has every individual been in every time. * * *

"Your people and your race have given you much, and they require as much from you. They have preserved your body and formed your mind, and they demand in return your body and your mind. However freely, as an individual, you move your wings, you are answerable to these creditors for the use of your freedom. Whether they allow you, as mild masters, to pass your life peacefully, or at some period call upon you for higher payment, your duty is the same. Whilst you think you live and die for yourself, you live and die for them. Contemplated in this way, the individual life is immeasurably small compared with the great whole. To us, the individual man, who has passed away, can only be discerned in so far as he has influenced others; it is only in connection with that which came before and after him, that he is valuable. But, in this sense, great and little are both of value. For every one of us performs a duty towards his people, who brings up his children, governs the State, or in any way increases the welfare, comfort and culture of his race. Countless numbers do this without any personal record of them remaining; they are like drops of water, which closely united with others, run on as one large stream, not distinguishable by later eyes. But they have not on that account lived in vain; and as countless insignificant individuals are preservers of the cultivation, and workers for the duration of the national

strength, so the highest powers of individuals—the greatest hero, and the noblest reformer—only represent in their lives a small portion of that national strength. Whilst man struggles for himself and his own ends, he unconsciously influences his own time, perhaps even beyond his own time, and his own people to all futurity. He calculates only what is due to his life, whilst he makes the obligations of later men greater and nobler. You see, my beloved, how Death vanishes from history in such a conception. The result of life becomes more important than life itself—beyond the man is the nation, beyond the nation is mankind. Every human being that has lived upon earth, has lived not only for himself, but for all others, and for us also—thus our life has been benefitted by him. As the Greeks grew up in noble freedom and passed away, and as their thoughts and labors have benefitted later generations of men, so our life, though it flows in a small circle, will not be useless to future generations!"

With such philosophy as *this* before our eyes, why should we speak of lost lives and a "Lost Cause," in the South. The humor of "Herr Hummel" is rather exaggerated in this book.

ART. VIII.— LAST DAYS OF THE CONFEDERACY.

BY HON. W. S. OLDHAM, SENATOR FROM TEXAS.

CHAPTER II.

DIARY OF THE LAST JOURNEY FROM THE CONFEDERATE CAPITAL—A SELFISH QUARTERMASTER—INHOSPITALITY OF CERTAIN RICH PLANTERS—CONDITION OF THE COUNTRY.

Having business with the President which I deemed important to the people of Texas, I was detained in Richmond during the week succeeding the adjournment. I left the city, in company with Hon. H. C. Burnet, of Kentucky, and Hon. J. D. C. Atkins, of Tennessee, on the evening train of the Richmond and Danville railroad, on Friday, the 31st day of March, not over forty hours be-

fore the evacuation. I arrived in Danville on the next day in time for the train on the Piedmont road, for Greensboro, North Carolina. Mr. Burnet stopped with his family at Danville, and Mr. Atkins and I continued our journey to Greensboro.

Before leaving Richmond I learned that General Grant had made a flank movement, on his left, with the apparent purpose of striking the South Side railroad, and that a corresponding move had been made by the Confederate army. It was rumored that, on the day and that preceding on which I left, heavy fighting had taken place on Hatcher's Run, near Dinwiddie Court House, but the results were not known. I afterwards learned that on the first day, Thursday, the Confederate troops were successful in holding their ground and in repelling the assaults of the enemy, but that the latter, after being heavily reinforced, had defeated our forces and driven them from their position. The result of those battles placed the South Side and Richmond and Danville railroads within his power. He could at will, and without further resistance move upon, take possession of them, and cut off all the supplies of our army. The army of Virginia was dependent upon those railroads, and particularly upon the Richmond and Danville road, for its daily subsistence. At the time it did not have two days' rations on hand. The possession of those roads by the enemy was fatal to the army of Virginia. It was without subsistence supplies, and was in possession of no source from which to draw them, and no avenue of escape was left. Affairs had been so managed as to identify the fate of the Confederacy with the fate of that army. Whether this was necessarily so, or was the result of error and bad management, remains to be considered.

I arrived at Greensboro, North Carolina, on Saturday evening, and remained there until the next morning. A great improvement had been effected in the management and running of the trains over the Piedmont railroad from Danville to Greensboro since I had traveled over that road, in the previous December. It then took me forty-eight hours to make the trip from point to point, forty-eight miles.

During that trip, at the distance of every few miles, I met trains standing upon the road at stations and between them, with tenders

without wood or water, and boilers without steam, locomotives out of order, or cars broken down. Troops which had been ordered to Wilmington, North Carolina, to meet the threatened attack upon that city, which was hourly expected to be made, were scattered all along the road, awaiting transportation. It appeared to me, as well as to others, that there existed a negligence and want of skill at that time in the management of trains upon the road, which, under the circumstances, seemed criminal. This road was then of the most vital importance to the country, in aiding military operations. It was the only railroad line in our possession connecting Richmond with the States south and west. The army of Virginia was dependent upon it for subsistence. The attention of the President and Congress was called to the condition of the road by myself and others, and prompt and efficient measures were adopted to remedy the evil. I was gratified to witness the success of those measures. The road now appeared to be well managed, and the train upon which I traveled made the trip in good time.

I remained at Greensboro until next (Sunday) morning, waiting for the train on the road from Raleigh to Charlotte. There were many rumors afloat in regard to the movements of the enemy. It was said that on the day previous (Friday) a large Yankee cavalry force, under the command of General Stoneman, had captured Salisbury and torn up the railroad. This was soon contradicted. It was then rumored that Stoneman was some twenty miles west of Greensboro, moving towards Danville. There was no doubt but that a large Yankee cavalry force was moving down from East Tennessee upon the rear of the army of Virginia, and upon the only line of railroad communication between that army and the South. From the best information I could gather, I felt certain that a considerable cavalry force was at no great distance from Greensboro. As no efforts were being made, or could be made, to drive back those advancing columns, I trembled for the consequences. I knew the condition of General Lee's commissariat, and that, if his supplies by way of the railroad from the South should be cut off but for a very few days, it would result in the destruction of his army, and that it would either starve, or disperse, or be compelled to surrender.

I left Greensboro on Sunday morning, in company with Hon. J. D. C. Atkins, with whom I had traveled from Richmond, and Hon. Mr. Menees, representatives in Congress from Tennessee, whom we had overtaken at Greensboro. Upon the train were forty or fifty Yankee prisoners, recently captured near Fayetteville, N. C., and now on their way to the military prison at Salisbury. Several of them were in the car in which I rode. They were a hard looking set. Many of them were insolent and insulting in their remarks, and, like all Yankees, seemed to be insensible to the fact that their language was offensive.

At Jamestown, the second station from Greensboro, we passed a train going our direction. Some little accident having happened, it had been "switched off" for repairs. Mrs. Davis, the wife of the President, with her children and servants, was traveling on that train, going South, accompanied by Burton N. Harrison, private secretary of the President. I did not see her, as our train did not stop, but I saw Mr. Harrison and spoke to him as we passed. I was aware that Mrs. Davis had left Richmond, a day or two before I did, and supposed that she had traveled much farther than where we overtook her.

We passed her about the hour that her husband received the dispatch from General Lee, informing the President that his lines had been broken, and advising the evacuation of Richmond. Little did she or I imagine the pregnant events that had transpired within the preceding forty hours, and the perils which at that moment threatened. Little did she then anticipate the terrible calamities that were so soon to befall her country and her husband; the first to be crushed beneath the iron heel of the conquerer, and the other to be made a captive, loaded with manacles, incarcerated in a gloomy prison, with the ultimate fate unknown. Poor lady! she deserved a better fortune.

While stopping a few minutes at the depot at Lexington, North Carolina, I met Hon. Gustavus A. Henry, a Senator from Tennessee, who, after the adjournment of Congress, had, with his lady, stopped in that town, not being able to return to Tennessee. He told me that he had an appointment to speak in Lexington on the Tuesday following—that he felt it to be his duty to do all that

he could to rally the country. Whatever may be said of others, I take pleasure in recording the fact that during the whole of the session of the last Congress, Mr. Henry bore himself as became a senator, as one to whom the people had confided the highest and most sacred trust. No despondent word ever escaped him. No factious denunciations were uttered by him—he never spoke of reconstruction, or of submission and pardon. His was the rallying tone and cheering voice. When his flag was lowered it was struck from his hand, and it fell because he could no longer hold it. O, that every man had been animated by the same spirit and resolution!

We arrived at Charlotte, North Carolina, on Sunday evening, and were again obliged to stop until the morning, as there was no evening train running on the South Carolina railroad. Here I met Judge Cantly, of Texas, one of the clerks of the Postoffice Department, who had been sent by the Postmaster-General to Charlotte, in charge of the archives of that department, in anticipation of the evacuation of Richmond. For some time previous to my leaving the Capital I was aware that preparations were being made for its evacuation. From facts which I learned as a member of the committee of inquiry, to which I have already referred, and which I shall state in their proper connection, I was astonished that it had not been evacuated some time previous.

On to-day we met several trains of cars loaded with Confederate soldiers, hastening on to join the army under the command of General Johnston. They were part of the Army of the Tennessee, who had marched under Hood to Nashville, and after the reverse there had been furloughed for a short period to visit their homes. Notwithstanding their long and hard service, they were now returning to the post of duty, apparently as cheerful and full of enthusiasm as the day they entered the service.

We left Charlotte on the train for Chester, South Carolina, on Monday morning, and arrived there in the afternoon. The army of Sherman had destroyed the railroad from Columbia to within a few miles south of Chester, so that trains from North Carolina went no farther than that place. From thence a new line and mode of travel had to be adopted. The new route now was, by any conveyance that could be obtained to Newberry, South Carolina, thence

by railroad to Abbeville, and thence by dirt road again to Washington, Georgia.

The usual mode of travel having been interrupted by the destruction of the railroad by the enemy, Messrs. Atkins, Meness and myself, under the authority of an act of Congress providing for such contingencies, called upon the post quartermaster at Chester to furnish us with transportation to Newberry. He very coolly and pompously informed us that he could not then do so—that he had a wagon and ambulance which he was holding in reserve for a senator and his family—that this senator had telegraphed to him that he would be in Chester on Thursday, and desired that he should have transportation ready for him upon his arrival; that the ambulance was for Mr. Semmes' family, and the wagon for their baggage, but perhaps we could get a seat in the wagon. He said that Mr. S. was his friend, and had done him favors, and that he must provide for him.

Such was the manner in which many officers stationed behind the army all through our country observed the obligations of law. The right of Senator Semmes to transportation, had he been there would have been only equal to that of one of us, yet the quartermaster refused it to us, and held it in reserve for him. He thus, in disregard of the duty imposed upon him by law, refused us transportation, and compelled us to remain three days in Chester, to await the arrival of Semmes, and was using the public property to discharge private obligations. I felt very much inclined to wring his neck, but I knew it would not accelerate my journey home. As we had no alternative, we awaited patiently the arrival of Mr. Semmes.

While remaining at Chester, I received information that on the night of the 1st of April the enemy had assaulted and broke the lines of General Lee's army, near Petersburg, and compelled it to evacuate Richmond, and that it was slowly retreating and fighting its way towards Farmville, or Danville, Virginia, hard pressed by the enemy. I further received the news that the President and cabinet had succeeded in reaching Danville. From this place the President issued a proclamation to the country, announcing the evacuation of Richmond, but assured the people that the army was intact, in a good position, and in fine spirits. Hope seemed imme-

diately to flee, and the gloom of despair appeared to settle upon the people. From that day no cheering word was ever spoken for the Confederate States. The cause was lost. It was supposed by some that General Lee would be able to lead his army to some point of safety, or form a junction with the army under General Johnston, in North Carolina.

General Hood, with Colonel Cunningham, of his staff, and Judge Upson, of Texas, arrived at Chester while I was there, on his way to the Trans-Mississippi department, in order, if possible, to bring over east of the Mississippi a part of the forces of that department.

On Thursday, the 6th, the expected Senator and his family arrived, and our conscientious quartermaster discharged his private obligations by furnishing him with an ambulance and wagon. We were permitted to take seats in the wagon, filled with trunks and boxes. We made a virtue of necessity, but had the quartermaster been as prompt in the performance of his duty as in the discharge of his private obligations for favors conferred, we would then have been in the State of Georgia on our way, and I would have been able to have got to Texas thirty or forty days sooner than I did, and to have avoided a pecuniary loss of thirty or forty thousand dollars in gold, and all the privations and hardships which I and my family have been compelled to endure, and those to which we are doomed for the future. Perhaps all was for the best, but it is difficult for me to indorse the philosophical conclusion, and exercise the Christian fortitude and resignation which it inspires. But for the delay he caused me I could have passed Montgomery, Alabama, before the capture of that city by the enemy, and the subsequent movements up the West Point railroad, over which I would have traveled, by which all facilities for traveling west were changed, and the route deserted.

We left Chester in the evening, and traveled twelve miles, when we stopped for the night at the house of a very wealthy family. The head of the family was a widow lady, having a son-in-law and his wife and two or three grown-up sons living with her. There were several other persons, both gentlemen and ladies, besides our immediate company, who were also stopping there. Amongst them were Col. Trenholm, son of the Secretary of the Treasury, and his two sisters. From the size of the house, the manner it was fur-

nished, and other evidences of the wealth of the owner, I was somewhat surprised at the terms upon which we were allowed to remain. The terms were that the ladies could get supper and beds, but that the genetlmen could get nothing to eat, and must furnish their own bedding and sleep upon the parlor floor.

Fortunately for us, the lady of the Senator, like all ladies of forethought, had laid in a supply of provisions. But for her kindness the gentlemen would have gone supperless to sleep, if not to bed. After partaking of the repast thus provided, we, who had them, wrapped ourselves in our blankets and went to sleep upon the parlor floor. The weather was sufficiently chilly to render them quite comfortable in a room without fire. Judging from all appearances, the family with whom we were stopping was worth over one hundred thousand dollars. They were surrounded with all the evidences of wealth and luxury. The house was sufficiently large, if furnished throughout, to afford comfortable beds to double the number of persons then in it. Upon our arrival at the house, two or three furloughed soldiers were sitting upon the steps of the portico drinking some buttermilk. They requested the privilege of staying all night, were told that they could do so, but must sleep in a negro house. They preferred to sleep out in the open air, to which they had been so long exposed, and declined the proffered hospitality. This family had never been visited by the ravages of the war, and had not by it been deprived of their means of support, and rendered unable to extend hospitality and accommodation to those who were compelled to travel in the performance of their duties to their country, and to the sick and wounded soldiers, returning on furlough to their homes, and who for years had been exposing life and health, fighting to preserve the property of that inhospitable family, in common with that of the whole country.

The next night we stopped at the house of a man who appeared to be quite wealthy. He had a large plantation, with a fine and commodious house, with all the indications not only of comfort, but luxury. I was in the rear when our company arrived and entered the house. Upon coming in I was informed that we were allowed to stay upon the same terms as the night before—starve and sleep upon the floor. I could control my indignation no longer, but expressed it in the strongest language I could employ.

ART. IX.—THE LAND OF SUPERIOR.

[Correspondence of Forney's Press.]

Few even of the most intelligent and well-informed have any accurate conception of the distances, the generous wealth and products, the people, or the inevitable and impending future of this vast and almost unopened section—a magnificent empire yet to be, and still but a part and province of our great country.

Right north of us, overlapping in length Philadelphia and St. Louis, and only a few miles up, there begins a singular and gigantic water formation, which must be in history the key of the continent—

THE MEDITERRANEAN OF THE NORTH.

Resting on the north border of that to-day powerful range of States, Pennsylvania, Ohio, Indiana, and Illinois—the Indian corn belt—washing them all, starts what is commonly known as the Lake country, the territory in which lie the five great lakes. How this imposing region, with its vast distances and broad surfaces, dwarfs and belittles the *great* sections of our country—the South and West and Middle States! How the broad fronts of Erie and Ontario alone overshadow New York and Pennsylvania and New England, and push them out against the sea—a little strip of land!

Yet all this was but the beginning—the southern edge or rim of the vast

WATER FORMATION OF NORTH AMERICA.

West from Superior, out to the mighty Red River of the North, into the Hudson Bay Co.'s territory, there stretches an expanse of small lakes and lagoon rivers, covering the whole country with a reticulated water system. This network of lake and bay and river, on so grand a scale, is something unknown in any other portion of the globe, and extends clear to that vast inland sea, Hudson's Bay.

This entire territory is wonderfully level, so that navigation is free and easily regulated. The great *divide* from which the waters of the continent flow west, north and south are hardly perceptible, and the heads of the streams seem almost to interlace with each other. There is said to be one place where a storm or strong wind will blow the spray of one ruffled stream into the other, and thus by an accident the spring water which in ordinary course should have been lost in Hudson's Bay, found its way into the Gulf of Mexico. These lakes and rivers are additionally connected by portages, a little stretch, across which was carried the birch canoe and its light cargo. These portages, which are found everywhere, vary in length from one mile up, but are mostly wonderfully short, when you reflect on what it is they divide.

THE INLAND SEA.

Such is the vast body of water which forms what may be called the Inland Sea of America. From Buffalo to the west end of Lake Superior and back you can now make a voyage, without leaving your ocean-built steamers, of 2300 miles, taking the direct route between the few main towns. From the north shore of Lake Superior to the south end of Hudson's Bay, the portage is but 300 miles, and all but a few miles of rivers, capable, where not unnavigable, of being made so. Are not these clustered lobes of water the heart of the continent, to and from which shall flow the trade of the future, and whose throb will regulate its wealth and commerce? Can imagination grow too warm in forecasting its splendid destiny? Is it not, by manifest destiny, the seat of empire—and an empire, too, that shall transcend in magnificence and imperial power the splendid kingdom of the Cæsars?

I have called this vast and yet undeveloped land—the heart of the continent stretching out its grand arterial lines to either ocean the St. Lawrence to the east, the great North Pacific to the west—

THE LAND OF SUPERIOR,

somewhat vaguely perhaps, but with a reason. In the present rather inchoate condition of our geography and information, that designation will best convey to the popular mind its relation to our present country. At present Lake Superior is the centre of

the great water system, with its actual and projected communications, and it must be so for a long time to come. Around it gather the great business enterprises of the day. On its shores will be fought the great battles of commerce. Into it the converging railways from the boundless wheat plateau of the Northwest will discharge their golden freight. No other name so well gathers up the common interest, the hopes, the daring enterprises that lie as yet half hidden in the womb of this vast region. Given by accident to the lake—a literal instance in which the words of the weak and foolish confound the wise and mighty of the earth—it may yet have a prouder future, and sparkle across the coronal of the continent.

ART. X.—GEOLOGY OF OZARK RANGES OF MISSOURI.

PART OF MISSOURI NOT YET UNDERSTOOD.

With a purpose as far as possible to aid in the development of the mineral and industrial resources of this State, your correspondent has been rapidly scanning its extreme southeastern part. In this field an anomaly presents itself in the geological structure of this region. It is in the fact that around the base of the outlying spurs of the Ozark ranges, in Scott and other counties, may be found the remarkable circumstance of a succession of strata, shelving upwardly towards the southwest; where, within a few miles of each other, are presented the earliest, or primitive rocks, up to the alluvial or last member of the quartanary system. Between the Devonian and the lower tertiary there is a hiatus in the order of rising successions. And, as the exposure from the Devonian, descending, is limited, I will confine present observations to the tertiary and drift. Earthquakes and traditions have succeeded in casting obscurity over this singular region. To ascertain to what extent the stories of the early settlers, concerning the ejectment of quantities of coal through the earthquake fissures and sand-blows might be true, we need only carefully consider the thing in connection with the absence of the coal formation. That the settlers were mistaken is certain, but only in so far as they mistook lignite for coal.

A TERTIARY OCEAN

Doubtless swept almost up to the base of granite hills, separating the mouths of the Ohio and Mississippi from each other nearly two hundred miles. The Mississippi waters entered this ocean near Cape Girardeau, if not at Grand Tower; those of the Ohio at the falls below Louisville; the Cumberland at Harpeth, and the Tennessee at Muscle Shoals. Around the southwestern rim of this great sea the White, Arkansas and Red rivers, with minor ones, disembogued their waters, many hundreds of miles from their present mouths. This vast western indentation of the Atlantic was gradually filled up by accumulated silts from the surrounding highlands, and by a constant elevation of the ancient shores. Swift currents, that drove in from the south, aided by periodical winds, carried vast quantities of asphaltum—which originally oozed out of the bottom of the present Gulf of Mexico as petroleum. This process is still going on, as can be seen any day in the bituminous matter cast upon the Texan and Mexican coasts. This asphaltum, sometimes in masses as large as a horse, and of every other size, down to the fineness of slime, was cast upon the shores of a rapidly receding ocean; and, in consequence of alluvial deposits, forming a surface over this material, we find millions of acres, or most of the alluvial portions of the Southwestern States underlaid with this substance, so often taken to be coal.

IT IS FOUND

Either as lignitic mud, lignitiferous clay, brown coal, pitchy lignite and jet. Of such vastness were these deposits that on Crowley's Ridge, Arkansas, in Louisiana and Mississippi, a *minima* of eighteen feet is found in a succession of four layers—one being seven feet thick. The effect, then, of the earthquake of 1811 was to reveal the fact that these lignite beds extend under all the sunken region in Missouri and Arkansas, comprising within this State, alone, forty-eight townships. As to

THE ECONOMIC VALUE OF LIGNITE

As a fuel, analysis of the Crowley's Ridge jet shows it to have but two per cent. of ash, while the less pure, from other exposures,

contains as high as thirty per cent. of ash. Its value is, therefore, intermediate between Illinois coal and wood, for fuel.

THE MOST USEFUL PRODUCTIONS

Of this region are pipe clay, potters' clay, fire clay, and many colored clays that are well adapted to use as paints. The colors are pink, violet, yellow, cream, and various other tints. At two estuarian points on these clay deposits attempts are being made to utilize them. The Cape la Cruz company is extracting hundreds of tons of vari-colored clays, which, after preparation, are excellent and cheap paints.

WOOLFORD'S POTTERY

Is one of the old institutions of Bollinger county; and I understand that a pottery is to be established in the vicinity of Commerce —on the Mississippi, in this county—where good clay is abundant. Several of the clays burn lighter colored, in the fire, and some are good fire clays when properly mixed with pure quartz sand, or old pounds of brick, retorts, or crucibles.

Other interesting objects abound in the drifts of the quarternary period. The gravel beds contain many valuable gems, as agate, sand, cornelian, jasper and chalcedony, or silicified palm. The fossil remembrancers of by-gone ages are Astraca, Favorites, (called petrified honey-comb) or silicified corals; Planicosta, Monxeras Turitella, &c., &c., and Zeugledon's; together with some sulphate of lime, sulphate of magnesia, or gypsum, and common salt.

The prospects of a speedy and thorough development of the almost innumerable resources of which this region, and in a very marked degree, Scott county, is possessed, seem excellent, when viewed in the light of the great industrial population new turning its course hitherward.—[Correspondence Missouri Republican.

ART. XI—THE CURLEW.

BY MARY WALSINGHAM.

Come wander by the shore, Nanette,
  Come wander by the sea,
And hear the curlew's cry, Nanette,
  The sweetest sound to me.
The farmer loves the meadow still,
  The hunter loves the lea;
The shepherd loves the sunset hill—
  A sailor, what loves he?
    He loves the ocean's ceaseless fret;
    He loves the sail with salt-spray wet;
    He loves the curlew's cry, Nanette,
    So plaintive, wild, and free!

Responding to the glacier's crash,
  The Switzer loves the horn;
He loves the winding *Ranz des Vaches*,
  From Alpine summits borne;
He loves the eagle's soaring shriek;
  The lark's hymn to the morn;
He loves to hear his mistress speak
  The welcome of return;
    And dearly as thy voice, Nanette,
    When hand to hand and hearts have met,
    I love above the ocean's fret,
    To hear the curlew mourn!

ART. XII.—URIEL ACOSTA—A TRAGEDY.

BY KARL GUTZKOW.

(Translated for De Bow's Review by Mrs. Sarah A. Dorsey.)

ACT IV.—IN THE TEMPLE.

(A low chamber, hung right and left with loose, open curtains.—Upon the wall is written, in Hebrew letters, the table of the law.—In the background, a heavy curtain separates this chamber from the interior of the Synagogue, which must be visible later.)

Scene I.—Santos, De Silva, (walk out; later a servant.)

Silva. And no one is permitted to enter
There—to him.

Santos. He must alone remain, as
Is commanded by our Holy Scriptures!
As He, the door of the Synagogue struck,
He could see plainly, 'twas the finger of God!

Silva. God's finger never does throw *stones*, Santos!

Santos. Still, in the people's scorn he must have felt
What he never would have felt otherwise!
Despised, fainting, wilh rent garments, he stood
An instant; then sank down before the door;
His head on the threshold of the Synagogue;
Alone; avoided as a pestilence—
What meditations must have swarmed around him?
So waits he, asking pardon; atonement!

Silva. May he find both! but was there not e'en now,
A message sent him from his sick mother?
Will you announce this to him, De Santos?

Santos. His brother sought entrance but now to him,
But this sudden illness of his mother
Could but seem to be the fruit of the *curse*.

Silva. (*Aside.*) Great-thoughted, amiable prophet, this!

Santos. Judith, too, that prophetess of Baal—
Who dared to blunt the edge of my keen curse,
Entreats to see him.

Silva. And is rejected!
All Amsterdam is ringing with the news,
The dreadful news of the second failure
Of Mannasseh Wanderstraten, I know!
Jochai was managed skillfully as
Branch of the richest houses in Europe,
To surrond him with a net, and drag him
Down, as a wary hunter does his stag.
A wretched life will be my brother's now!
Among his paintings, lounging in his park,
Surrounded with accustomed splendor, safe,
Without care, every pound has brought interest
So easily, this young, vengeful merchant,
This rejected son-in-law fell on him,
This man, taught in London and in Venice,
Where one can, with a breath, collect
And store up every obligation fast
In one coffer, so hold fate in one's hands.
My brother is thus in Jochai's power,
And yet, Jochai, inflamed with love, as well
As vengeance—entreats in this despair, in
All this sorrow, Mannasseh's hand to clasp
In amity! He'll yet wed with Judith!
And this must be! Can Judith hestitate
To save her father—sacrifice herself?
Must she not? *Will* she not? the frightful woe;
Betrayal of her friend; recantation; all,
Even her own life, she may not withhold
To save her father, who can live only
Amidst the splendor he's grown used to!
And you have kept this back, all this, from him!

Santos. In time of penance, one is forbidden
With the world to hold any intercourse,
Or even to receive a word in writing.

[*A servant brings in a letter*

Servant. For Uriel Acosta comes this letter!

Santos. You know that He may not receive it now!

Servant. His brother Reuben it is that brings it!

Santos. Take the letter back! It is not allowed
For such a message to come in the cell
Where penitence makes shift for atonement.

[*The servant takes back the letter.*

Silva. Why will you keep back the letter, Santos?
Hindering a sigh from stealing to him.
Must he know naught of Judith's misery?
Of Mannasseh's fall not hear a whisper?
You know 'tis for his mother he recants;
'Tis for his bride he would make atonement.
It is not noble, Santos, to keep so
From him what his dying mother sends him;
What the fainting heart of love would say, now!

Santos. Behold there the gray haired Akiba,
Who, tho' full ninety years of age, Faith now
Makes appear so young. He comes hither.
Acosta will now receive from that good
Rabbi's hand the formulary of
Atonement. Go you without! Join you in
The prayers of the congregation, while
We meet Acosta! In a few hours
Your longings shall be safely quieted.

Silva. I will go, but deal mercifully, Santos,
With the sorrow-stricken. You should be proud
That such a man's base humiliation
Witnesses to the magic of your priest-craft.
I hope this ill begun day may end well,
And that *you* may not repent *his* penance.

Scene II.—Rabbi Akiba, a very old, white haired man, supported as he is led forward by two younger Rabbis. Rabbi Vander Embden, with a roll of parchment. Santos. Later, Uriel.

Akiba. (*After he had been conducted to the seat of honor by the table.*) Bring you the recantation, Van Embden.

Emb. It is here, most worthy Ben Akiba,
Written full you see upon this parchment.
Akiba. Then let me, for this last time, now confess
This penitent. Sit you about me here
And believe. Our law contains all truth—all.
Santos. Acosta is now approaching to us.
Akiba. The Talmud contains all truth, all, I say.
Sit you down, Rabbis. Van Embden shall take
His pen, naked words into air oft fly,
Sometimes they be, sometimes they are forgot.
The Talmud contains all truth, believe it.
A man may study in our Talmud
He will find everything of value there!
[*Seats himself. Uriel enters pale and weak.*
Akiba. Sit you, Acosta. There stands—does there not—
Is that not a stool there. Rabbis, how now?
Sit you, Acosta, know I count ninety
And nine years. There is a man knows well
What weary feet are. Oft very weary feet.
[*Acosta sits down.*
Santos. You ask a brief respite, Acosta?
Akiba. Let me speak, Santos. Ben Akiba has
To talk with Uriel. All truth's therein.
See my youthful Uriel Acosta.
Two paths remain for the skeptical foot,
When one grows satiated with doubt, as you.
The path through repentance, short, but severe;
The other mild, but of long duration.
Uriel. I will have the short one; kill me—but quick;
I do not wish to know e'en *how* I die!
Akiba. No! No! In fasting, in sacrifices,
In Talmud reading, thou hast little faith!
It was always so! So it was always!
Therefore I ask thee now for this last time,
Uriel Acosta, feelest thou, in
Thy inmost soul, that thou hast sinned, and
In thy Book, that thou hast God blasphemed?

Acosta. The God who is the God of *Jews* alone,
Him have I *never* comprehended. Oft
Have I him insulted! Stands it not thus
Plainly written down in that Protocol?
Santos. Only equivocal, deceitful, false,
Is all that you have yet essayed to teach.
'Tis sophistry; explain what you believe;
Explain the faith you would delude us with!
Akiba. Explain, Santos. Be considerate, now;
Press not hardly on a sick man. Explain
How shall a man explain; what he believes—
Explain of holy conviction?
Pardon, De Santos! Oft you speak yourself
Too like an Epicurean—explain!
Does the sun explain how it shines so bright?
Does the fire explain how it flames so high?
God's revelation *is* explanation.
He has writ words upon our stone tables
[*To Santos*
From you,
[*To Acosta.*
For you—shall come—*explanation.*
Emb. Then plainly tell us what you "*will*" believe!
Uriel. I say—I said to you before this—
The God who chose the Jews, deniest to him
Who revealed his countenance to them alone,
Who became like man, that they might understand
Who speaks only to them, gives signs,
Wrote a revelation, for *them* only,
In which every word and every accent
Is to be taken as God—inspired.
I do not comprehend him, as you say.
I believe that my reason may be wrong;
That one should never doubt the alphabet;
That I have not mastered God's word.
I believe this; I declare it now,
I believe it sincerely. I thank you
From my heart you spare me *explanation.*

Santos. Such explanation shows *obstinacy*.

Akiba. (*Persuasively.*) Take the *long* path—then what
thou shalt learn out of
Thy inmost heart shall flow upon thy tongue.
Oh! choose the *long* path, Acosta, choose it.
Thou wilt scourge back peace into thy heart, so—
Health into thy sick soul. My worthy son,
In such doubts as thou dost feel, Acosta,
Is oft destroyed many an earnest searcher.
The Talmud gives oft examples of them.
They err through much study—too much learning.
There was

[*Half to the other Rabbis about him.*

A great doubter lived once, whose name
Was Elias Ben Abuja, a pupil
Of one of our wise Rabbis of that time;
And Rabbi Mechir, too, was his pupil;
And because he doubted

[*Rises up.*

Was he *accurs'd*.
Elias Ben Abuja was, like you,
One shuddered when his name was said aloud;
And they called him "Acher"—No! the other—
Was—The Talmud says the *other* was "Acher;"
The other was named so—"Elias."
And it came to pass that at last he died,
And was buried, and arose even from
His grave—a dark, dreadful gloomy vapour.
His grave it smoked—it *smoked*—it did—
Until his pupil, Rabbi Mechir, got
Peace for his soul, through prayer, long prayer.
He prayed—this pupil for his master,
And the grave smoked no longer; so you see
Such an Acher art thou! It is all *there*.

[*Sits down.*

Uriel. Have I coveted fame of novelty?
The smoke from Acher, then, was the soul's fire.

The flame, spirit, that you buried with him.
Am I an Acher? I am the other—
The everlasting "*other*," because, you see,
In the eternal change lies still surely
The testimony to our eternal
Progress, and eternal existence, too.
And if the Talmud must be so explained,
Then listen: I do not believe Acher
Ever lived! Acher is the image used
To represent free thought! Only in change
Can I see my own *Truth*. Only in change
Do I learn my transformation. "Elias"
Is Doubt's holiest *symbol*. Doubt is the
Muse of Faith, and every thinker must be
An Acher. And as the Talmud's far more
Wise than *you* are, so it names this Acher,
(But he is a symbol, who did never
Live) under this form of a great master
And a great pupil—both truly pious;
Because from Doubt alone can e'er proceed
A pious, steadfast, worthy faith for man.

Akiba. De Santos, have I heard rightly? He says it—
Elias Ben Abuja has not lived!—
An actual being—a man—describ'd
In our Talmud—He is only a myth;
A symbol; and what faith has held so fast,
As bone and flesh, alive as life can be—
This he says was but a cloud—a smoke picture.
Men later set themselves to draw for us.
No! No! That is a meaning still too new—
Too fine for us—never shall be received!
Give him the form of recantation now!

(TO BE CONTINUED.)

ART. XIII. SILK AND SILK MANUFACTURES.

REPORT OF THE UNITED STATES COMMISSIONER TO THE PARIS UNIVERSAL EXPOSITION.

ANTIQUITY OF THE USE OF SILK.

China, even in our own day the most important country for the production of silk, appears to have been its cradle at the most remote epoch. The Chinese annals attribute to the Emperor Fau-Hi the merit of having employed silk in the manufacture of musical instruments of his own invention 3,400 years before the Christian era.

The Empress Si-Ling-Chi was the first to invent silk tissues, 2,650 years before our era, which invention contributed so immensely to the prosperity of her country that she was placed among the Chinese divinities, under the name of Sien Thsan,* and even now the Chinese empresses offer annually solemn sacrifices to her memory.

As it is the habit of the Emperor of China once a year to plow the earth in order to add dignity and honor to agricultural pursuits, so in like manner the empress, by annually visiting the silk-worm nurseries and laboring with her own hands, encourages the production of this valuable commodity.

Two centuries before the Christian era the Chinese carried on a commerce in silk with Persia, Greece and Italy. Their caravans or troops of dealers were protected by military settlements or colonies.

The generic name given to this precious material has remained unchanged except with a slight modification of the word. In fact the French word *soie* or *silk* bears among them the name *sec*.

The Mongols name it *sirke*, the Manthons *sirche*. The Russians designate it by the word *chek*, and the Greeks by *sez*, &c.

Notwithstanding the antiquity of the use of silk, its nature was for a long time unknown, and its importation into the west was of recent date compared to its high antiquity in Asia.

The history of the introduction of the first eggs of the silk worm into Constantinople during the reign of the Emperor Justinian is well known.

The Chinese, determined to retain the monopoly of the silk industry, forbade the exportation of the eggs under penalty of death. They were, nevertheless, obtained A. D. 552, by two Persian monks, who had lived a long time in China as missionaries, and were acquainted with the rearing of silk-worms. Stimulated by the gifts and promises of the Emperor Justinian, they succeeded in conveying a large number of eggs concealed in hollow canes to Constantinople, where they watched their hatching and the development of the butterflies. The breeding of silk worms spread, however, very slowly in Europe. The Moors imported them into Cordova about the year 910. Greece and Italy undertook it in the twelfth century; thence this branch of industry passed to Marseilles. At the commencement of the fourteenth century Pope Clement V introduced it in Avignon. Under Henry IV, Sully established a silk worm nursery in the garden of the Tuilleries. Louis XIV continued to encourage this enterprise in France, though with but slight success, so ar as relates to the production of cocoons and the spinning of silk.

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*This name means *the first promoter of silk industry.*

The weaving of silk goods with foreign thread had, on the contrary, already made marked progress in France, and had a great development, which it preserved even up to the revocation of the edict of Nantes, after which period the weaving as well as the spinning of silk lost ground considerably.

The emigrants carried this beautiful industry into England, Germany and Switzerland, and raised the most active competition against France, where manufactures of silk remained in a languishing condition up to the close of the great revolution at the end of the last century, and until shortly before the return of peace to Europe.

RISE AND PROGRESS OF SILK INDUSTRY IN THE UNITED STATES.

America has not been insensible to the efforts made by other nations to appropriate to themselves the production of silk.

During the early pe of the colonization of Virginia, James I, on several occasions advised with and encouraged the London Company in regard to the cultivation of the mulberry tree, and addressed a letter to the company in which he enjoined its members and exhorted the planters to apply themselves with dilligence to the breeding of silk-worms, to establish silk-worm nurseries and spinning grounds, and to devote their activity rather to the production of this rich commodity than to that of tobacco, to which he manifested a profound aversion. Upon this advice, they planted a large number of mulberry trees, but collected little silk, in consequence of the difficulties resulting from the speedy dissolution of the London Company.

However, the culture of the mulberry was resumed in Virginia about the year 1651. The tree was indigenous in the colony, and the enterprise was so far advanced in 1660 that the coronation robe of Charles II was the product of the silk-worms of Virginia. But the steady advance of tobacco culture caused the business so to decline that it seems to have almost disappeared by the close of the century.

During the eighteenth century efforts were made to introduce silk husbandry into all the American colonies. It had been started as early as 1718, with some success, in Louisiana, then under the dominion of Spain. The most strenuous exertions were directed to Georgia. Private gifts co-operated with acts of Parliament, and its settlers were stimulated by grants of land to cultivate the mulberry and raise silk-worms. In 1732, artisans, skilled in this industry, were sent over from Europe. The French emigrant who had charge of the business proved treacherous, and destroyed the machinery, eggs and trees, and fled from Georgia.

The Italian who succeeded him was more trustworthy, and some raw silk was soon exported to Europe. In 1735 a beautiful robe was made in England of Georgia silk, which Queen Caroline wore on a great state occasion.

In 1740 the export of cocoons reached 1,000 pounds, and their product commanded the highest prices. A large silk establishment was soon erected in Savannah. The cocoons annually delivered to it, in the years from 1758 to 1766 inclusive, ranged from 10,000 pounds to 15,000 pounds, and in the latter year they reached 20,000 pounds. During the same period the annual export of raw silk ranged from 500 pounds to 1,000 pounds. At this period the silk culture was one of the most flourishing and profitable in the colony. But its success was of short duration. After 1766 the governmental bounties were withdrawn, and this industry began to droop. The storm of the revolutionary war prostrated it. After the peace, the planters of Georgia turned their attention to the growing of cotton, and silk culture utterly and finally disappeared.

The experiment in Georgia, its rise, progress and decline, are the history of silk culture in all the colonies. Brief notices of some other colonies must suffice.

In South Carolina silk-growing was prosecuted before the revolution, and for a time flourished. The mother of the celebrated Pinckneys carried some silk, produced on her own plantation, to England, where it was woven into tissues. Gowns were made of it and

presented by her to the mother of young George III, and to the elegant Earl of Chesterfield. But the same causes that uprooted the business in Georgia destroyed it in Carolina. It passed away on the advent of cotton-raising.

Silk husbandry received early attention in Pennsylvania and New Jersey. The British government aided it by liberal bounties. Dr. Franklin, while in Europe in 1770, sent home mulberry cuttings, silk worms, eggs, &c., for distribution, and, with other influential citizens, gave it much encouragement.

In 1771 a silk establishment was set up in Philadelphia, which, during a series of years received a large amount of cocoons. A lady of Lancaster county raised cocoons from which a piece of silk, fifty yards in length, was manufactured. From this a court dress was prepared for the Queen, who sent from Windsor Castle, in return, a handsome present to the fair donor on the banks of the Susquehanna.

Large mulberry groves flourished at Princeton, New Jersey, and cocoons of excellent quality were produced in encouraging quantities. But, as in the South, the convulsion of the revolution, unusually severe in Pennsylvania and New Jersey, prostrated this branch of industry, and, though efforts were made after the peace to revive it, they were not specially successful.

Massachusetts and Connecticut took the lead in this enterprise in the East. It received the fostering support of the authorities. Governor Law, in 1747, appeared in a silk coat and stockings of home production. A few years afterwards, President Stiles, of Yale College, officiated at Commencement in flowing robes of Connecticut silk. In 1770 Boston and New Haven vied with each other in raising cocoons, and in spinning, dyeing, and manufacturing raw silk.

A flourishing manufactory of sewing-silk was established at Mansfield, Connecticut, before the revolution. Ipswich, Massachusetts, was at the same period noted for its silk products; while the largest and finest mulberry nursery in the country was growing at Northampton.

All these enterprises suffered by the blight which fell upon all industrial pursuits during the revolutionary war.

Silk husbandry and manufacturing had almost ceased to exist in the United States at the commencement of this century. Since then they have not kept pace with the advance in kindred pursuits.

Nevertheless, they have always been prosecuted to an encouraging extent in various parts of New England, New York, New Jersey, and Pennsylvania, as, for example, Mansfield, already referred to, has done a large business in sewing-silks, and produced, in 1839, five tons of the raw material. Washington, Pennsylvania, always kept up the business. It was introduced into the State prison at Auburn, New York, in 1841, and the first year the product of sewing-silk was about $13,000. It was steadily increasing in the country when, some twenty-five years ago, its growth was checked by a disastrous speculative furor in the *morus multicaulis* shrub, which, for a few years, raged through the Union like an epidemic. The reaction fell heavily upon the whole business, covering it temporarily with odium and ridicule. It has since been slowly recovering from this season of delusion and folly.

In 1840, the product of silk raised in the United States was estimated at about 60,000 pounds, valued at $250,000. In 1844 it had increased to about 400,000 pounds, worth $1,500,000. By the census of 1850, when the effect of the speculative mania alluded to had culminated, the annual product was reported at only 14,763 pounds. Then it began to revive, and by the census report of 1860 it appears that the manufacture of sewing-silk was carried on extensively in Connecticut, New Jersey, Massachusetts, Pennsylvania and New York, the States being named in the order of the value of their products.

The annual production in those States, including tram, organzine, &c., was placed at upwards of $5,000,000.

Ribbons were made to a small extent, as were also silk stuffs. But, aside from sewing-silks, the chief silk manufacture consisted of ladies dress trimmings, coach laces, &c., of which the cities of Philadelphia and New York are reported as producing about $2,300-000. Since 1860, the business, in all its departments, has made steady progress, and the current period is more favorable than any previous one for its energetic prosecution.

Our country is specially fitted for silk culture, The experiment in Georgia and South Carolina proved that their soil and climate were peculiarly suited to it. May we not hope that, after a lapse of eighty-five years, it will be renewed in those States, and be prosecuted successfully not only there, but also in all the middle latitudes of the Union, whose rich soil, genial sun, and dry atmosphere are admirably adapted to the cultivation and manufacture of this beautiful and useful article?

But, though the possibility of the success of this kind of industry has been demonstrated in a great number of localities in America, it is probably to the Pacific coast that we are to look for its greatest triumph. Among the finest cocoons exhibited at the Exposition were specimens from California. They were perfect in form, and remarkable for their white, silvery hue. The soil in the valleys of California is proverbially fertile, and mulberry trees are produced of the richest and most luxuriant growth.

Its dry, warm, equable climate, makes it vastly superior for silk husbandry to France or Italy. In European countries the rain and dampness destroy a much larger percentage of the grubs than on the Pacific coast. An intelligent and enterprising French emigrant, who is enthusiastically prosecuting this industry at San Jose, declares that the humidity and electricity of Europe destroys from 25 to 75 per cent. of the silk-worms, while under the dry, elastic skies of California, few ever perish. These considerations in a measure compensate for the higher wages of American labor.

There are other savings in this industry as compared with its prosecution in Europe. In California there is no necessity for artificial heat to hatch the eggs. To transfer them from the cellar to the garret and expose them to the beating of the sun's rays is sufficient. Nor need the cultivator run the risk of the "baking" process, so liable to dim the lustre of the silk. The powerful rays of the sun for a few hours will stifle the chrysalis, render the cocoon ready for the spinner, and preserve the brilliancy of the material.

California eggs are already highly valued by foreign silk-growers. Cultivators are diffusing them along the Pacific coast. A considerable capital is invested in the silk business. The largest cocooneries are at Santa Barbara. An important experiment is now being made there by energetic parties, who have already 10,000 mulberry trees, and have produced the present year (1867) upwards of 300,000 cocoons of excellent quality.

An enterprising company is erecting an extensive factory at San Jose, to be furnished with all necessary machinery, including some forty looms, for producing taffetas in all colors and of the best qualities.

May we not hope that the day is not far distant when the plains that *slide down* from the western base of the Sierra Nevada will become as famous for beautiful silks as its gorges have long been for precious metals and its valleys are now becoming for cereals?

The nationality of the commission from which this report emanates must furnish the excuse for dwelling so long at the outset upon the subject of silk culture and manufacture in the United States. It will be resumed in brief terms near the close of the report. As germane to the American branch of this subject, it may be stated in this connection that silk culture was recently commenced in the republic of Ecuador. Its soil and climate are said to be wonderfully adapted to the growth of the mulberry and the rearing of the grub, especially in the neighborhood of Quito.

The first eggs were imported from France in 1859. The first exported to France was in 1865, where the eggs were highly esteemed, and were wholly exempt from the peculiar disease prevailing in Europe. Like its vegetation, silk culture in Ecuador can flourish the year round.

The food required by the worms is only half as much as in Europe, because of the superior richness of the leaves and the more favorable condition of the climate. The number of mulberry trees now growing in the republic is nearly a million. Labor is abundant and excessively cheap. The promoters of this enterprise in Ecuador indulge sanguine hopes of success. No doubt considerable portions of South America are well adapted to this department of industry .

REARING OF SILK-WORMS.

Numerous observations made by French and Italian scientific agriculturists and silk husbandmen show :

First. That the culture of the mulberry tree and the breeding of silk-worms is possible up to a limit very far advanced northwards, a limit fixed by the frequent occurence of a temperature of 77° Farenheit.

Second. The limit of the culture of the mulberry does not pass beyond that of the cultivation of the grape, and the culture of the former is possible wherever the latter will thrive.

Third. The mulberry can be raised upon the sides of the mountains of Europe up to the point where the mean temperature of the year is 49° Fahrenheit.

Fourth. Climates habitually stormy are not congenial to the breeding of the silk-worm.

Fifth. Places afflicted with fevers (proving the existence of marshy emanations) are pernicious to the silk-worm.

Sixth. This industry is to be considered rather as an adjunct to a large farm than as a chief occupation.

To these principles, given as the natural conditions necessary or hurtful to the industry of silk husbandry, are to be added the not less important questions of the price at which it returns from the hand of the workman in each locality, and of the abundance and scarcity of manual labor. We must, however, remark that the insufficiency of worms and their high price during more than ten years, in consequence of the malady of the precious grub in Europe, allow a remuneration sufficiently high to cover the expenses of the dearest hand labor, especially if we consider that the duration of care and attention which the harvesting of the worms demands does not exceed six weeks, counting from the day of hatching to a period after the warehousing of the cocoons, which latter, according to the best systems in use in Italy and France, can be reeled during the whole year.

PRODUCTION OF RAW SILK.

The production of the cocoons is essentially an agricultural industry, and the winding off the cocoons into raw silk may be considered as semi-manual and in part automatic. All the other transformations of the silk, from the throwing to the making of the stuffs, are entirely mechanical.

It can hardly be possible that henceforth the United States will not take a large share in the immense industrial and commercial movement to which silk has given rise in the world.

Certain countries, such as Italy and France and the oriental nations in general, employ themselves with all the transformations of silk, from the culture of the mulberry and the breeding of the worm to the manufacture of tissues.

England, (and others follow her example to a limited extent,) although not producing silk on her own soil, yet carries on a most important commerce in that article, by means of her colonies and powerful marine. She develops with equal activity the spinning or throwing of silk thread and the weaving of silk goods.

In a word, nations such as the United States, Switzerland, and Northern Germany, which are almost exclusively manufacturers, confine themselves to the transformation of silk bought in markets more or less distant.

The aptitudes of manufacturing nations change or are materially modified from time to time. Russia, for example, could, but recently, hardly be ranked among manufacturing nations. The people of that great empire are now making not only rapid progress in the industrial arts, but they have advanced in the south of Russia, on the Caucasus, even to the breeding of silk-worms.*

The production of the silk-worm in that country, since the annexation of trans-Caucasian Asia for example, has been three-fold, though the silk is far from being worked with the requisite care; it being generally irregular and suited only to the most common productions.

In 1865 this part of Russia exported nearly 30,000 kilograms, or 66,155 pounds,† representing a sum of about 1,560,000 francs, ($312,000,) that is to say, at the price of about 52 francs the kilogram, whilst that of France and Italy sold for at least double that price.

It is thought that the total silk production of Russia amounted to about 88,000 kilograms, or 194,054 pounds, estimated at a value of about 4,576,000 francs, ($915,200.) This result is far short of the limit which may be ultimately attained both in regard to quantity and price.

Germany and Switzerland have the same tendency, whilst France and the different States of Italy and Spain, in consequence of the scourge which attacked the production at its source some years ago, are becoming almost entirely manufacturing countries, and benefit India and the extreme east by their increasing wants.

The United Kingdom of Great Britain alone seems to profit by fluctuations so unfavorable to the rest of Europe, and even America.

English ships go to collect in China, in Japan, at Calcutta, Bombay and elsewhere, the eggs or *graines*, cocoons, silk, and the *waste*, to sell again. After having first directly supplied her own manufactories, the surplus is disposed of to her neighbors in Europe; she thus profiting by the transport, warehousing, commissions, brokerage, etc.

Silk forms one of the principal articles of commerce in the transactions of England with the extreme east.

The following table will show, as near as can be ascertained, the value of raw silk produced annually in the various countries of the earth, and its vast importance as an element of natural wealth:

Asia	$141,000,000
Europe	73,480,000
Africa	220,000
Oceanica	120,000
America	80,000
Total	$214,900,000

* The culture of the mulberry tree, the introduction of which into Russia dates from the period of Peter the Great, remained without any great results up to the commencement of the present century.

† The metrical system being in use in most of the countries from which we have derived our information, and constantly tending to extend itself more and more, especially since the international conference at Paris, we have thought it useful and proper to retain in part, for the numbers cited, the franc as the unit of money and the kilogram as the unit of weight.

These amounts may be divided as follows, viz.:

Chinese empire	$81,200,000
Japanese empire	17,000,000
Persia	5,000,000
The island of Asia Minor	5,200,000
Syria	1,800,000
Turkistan (in China)	400,000
Turkistan (independent, in Asia)	1,400,000
Corean Archipelago	100,000
France	25,600,000
Italy	39,200,000
Turkey in Europe	7,000,000
Spain and Portugal	3,200,000
Pontifical States	1,300,000
Greece, Ionian Island	840,000
Morocco, Algeria, Tunis, Mediterranean coast	300,000
Basin of the Danube, Austria, Bavaria, Servia, Hungary	1,280,000
India	24,000,000
America	80,000
Total	$214,900,000

These figures have been greatly reduced during the last few years, as far as concerns the production in Europe. The difference, however, was made up by the quantities received from China, India, Japan, and the Levant.

But those *exotic* silks are far from being as highly esteemed or as valuable as those of Europe.

The modification in the relative value of silk which has taken place during a century is worthy of note.

A century ago nearly all the silk, or at least five-sixths of the quantity manufactured by French fabricants, came from foreign countries, from the Levant, from Persia, Sicily, Italy and Spain.

The other sixth only was produced in the south of France. The mean price of French silk was 15 francs the *livre*, or 30 franks the kilogram, (2 1-5 pounds.) Exotic silks were much dearer. The most common foreign raw silk, that of Greece, then brought 120 francs the kilogram; China and India silks, 240 francs; and that of Italy was valued at from 500 to 600 francs.* But by degrees French silk improved to such an extent that, in the early part of this century, the price advanced to 70 francs the kilogram. This rate was maintained almost without variation up to the year 1840; while foreign products were depreciated to such a degree, that the very best quality from the Levant and from Persia sold at 40 francs and the waste at 32 francs.

Italy during this period maintained the elevation in its prices, on account of the very excellent quality of its silks. That was, nevertheless, surpassed by the French silks, which finally rose from the last to the first rank, which they still maintain.

The raw silks of France, of the first quality, at a later period brought 150 francs, while those of the best kind from Italy realized hardly 100 francs. These results are due entirely to the progress in French manufactures, which has hardly contributed to the extraordinary development of the silk industry that has occurred in that country.

This specialty of silk industry has given to France the importance that the cotton industry has to England.

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* These are the prices as published in the price current of the Amsterdam market, where at that period the greatest quantity of foreign silk was sold.

In this connection it may be profitable to give a rapid sketch (so far as data will permit) of the progressive development of silk culture and manufacture in the principal countries of Europe and Asia. The amounts are given in round numbers, and though obtained from trustworthy sources may be liable to some corrections.

In 1789 France produced 1,000,000 pounds of raw silk. Near the close of the century she consumed about 1,200,000 pounds of silk thread, from which she manufactured from $3,000,000 to $4,000,000,* (15,000,000 to 20,000,000 of francs.) Of this she purchased about $1,400,000 (7,000,000 of francs) from other countries. The stock of stuff goods consequently amounted to from $4,400,000 to $5,400,000, (22,000,000 to 27,000,000 francs,) of which France exported about one-half to foreign countries.

In 1812 France produced 600,000 pounds of raw silk and 340,000 pounds of organzine, valued at $5,000,000. The same year she imported 900,000 pounds, valued at $6,750,000.

In 1820 it is estimated that French manufacturers transformed $10,000,000 (50,000,000 francs) of materials, of which one-half was furnished by the southern departments. The goods produced from these materials represented a value of more than $20,000,000, (100,000,000 francs,) of which $14,000,000 (70,000,000 francs) were consumed at home, and $6,000,000 (30,000,000 francs were exported.

As first in importance we begin with France.

PROGRESSIVE DEVELOPMENT OF SILK INDUSTRY.

FRANCE.

In 1812 the silk looms in seven of the principal towns of the empire numbered 27,000. In 1824 Lyons alone had nearly 25,000. In 1839 the number in Lyons had increased to 40,000, and in the whole kingdom to 85,000, employing about 170,000 workmen. In the latter year the entire production was estimated at $46,800,000.

In 1850 the business had largely increased. The value of raw silk grown in the kingdom was $18,000,000 (140,000,000 francs). The capital employed, $50,000,000 (250,000,000 francs), the amount imported being $21,000,000.

The silk goods produced were valued at $75,000,000 (375,000,000 francs), of which about one-third were consumed at home and two third exported.

In 1855 the value of silk goods sold was estimated at $106,500,000, of which about $26,500,000 was imported. The home consumption was $35,000,000, and the export was about $71,500,000. The number of silk looms in the empire was about 225,000. The number of persons engaged in this industry was upwards of half a million.

In 1860 the value of French silks amounted to upwards of $140,000,000, (700,000,000 francs), and yet this was not sufficient to supply the demand. France purchased in foreign countries $40,000,000 (200,000,000 francs), chiefly of piece goods, velvets, and ribbons. Of this $180,000,000 France exported about $110,000,000 (550,000,000 francs).

These totals were reduced at the outbreak of the American rebellion. France restricted to a marked degree her purchases of silks. The United States purchased from France of silk tissues alone, in 1859, $27,600,000 (138,000,000 francs); in 1860, $20,800,000 (104,000,000 francs), but in 1861 only $5,000,000 (25,000,000 francs).

Subsequently the business increased, the Lyons exports of silks to the United States in 1865 amounting to $,9,900,000, and in 1866 to $5,000,000.

Though the rebellion has been suppressed, the fiscal measures resulting therefrom still have their effect upon the silk husbandry and manufacture of France, operating as they do at the same period with the scarcity of indigenous silk, and the prevalence of mysterious disease among the silk worms, which has by no means disappeared, and to which special reference will be hereafter made.

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* Dollars at *gold* valuation in all cases.

GREAT BRITAIN.

When the Duke of Parma sacked the city of Antwerp, in 1585, its silk artificers fled to England, carrying with them their experience and skill in this novel branch of industry. It was encouraged by the English government, but the humid climate being unfavorable to the rearing of the grub, it was not specially successful.

On the revocation of the edict of Nantes, in 1685, some 75,000 of the most skilful artizans of France took refuge in Great Britain, among whom were a large body of silk weavers, who settled in Spitalfields (then a London suburb,) and under the fostering care of the Crown they and their children plied their vocation with success for a century and more, some of their descendants remaining in the same locality to this day.

For 30 or 40 years after immigration England was wholly dependent on foreigners for organzine silk thread, but in 1718 Mr. Lombe, an English capitalist, visited Piedmont disguised as a common laborer, took sketches of silk-throwing machinery in use there, and on his return erected an extensive mill at Derby, which produced more than 3,000,000 yards of organzine per day.

For many years raw silk was largely imported. Acts of Parliament were passed from time to time stimulating its manufacture, and the business was steadily advancing, when in 1764, on account of low wages, scarcity of work, and the preference shown for French silks, the weavers of Spitalfields and the silk operatives of other localities assembled, in a tumultuous manner, and petitioned Parliament for the total prohibition of foreign-wrought silks. The commotion was kept alive by combinations of operatives for several years, till, in 1772, it broke into open riots, which convulsed London many days, the final result being the passage of prohibition laws which after trial proved unsatisfactory.

This system of prohibitory legislation continued till 1824. A high English authority has declared that "the manufacturer, depending upon the protection of parliamentary restrictions on foreign competition rather than on his own skill and exertions, was not anxious to discover and introduce improvements into the manufacture." And he states that "since the change of system the imports of the raw material and the exports of the manufactured article have rapidly increased." In 1825 the English silk looms numbered about 24,000; in 1855 they had increased to more than 110,000, consuming about 5,500,000 pounds of thrown silk, and producing goods to the value of near $45,000,000, besides a considerable amount of spun silk, and goods of which silk constituted a part.

In 1855 England consumed of her own silk manufactures more than $35,000,000, while she imported about $20,000,000. In 1860 the value of her silk manufactures was estimated at some $90,000,000. On account of the extreme dampness and chilliness of her climate, (of which mention has been made,) she raises no silk-worms, but imports the raw material.

In 1856 the value of her imports of raw silk was (omitting fractions) $32,000,000, and in 1857 $58,000,000. It fell off in 1858 on account of the "panic," but again revived. Nearly one-half the amount of the raw material came from China, and a large share of the balance from her East India possessions.

During the three years just mentioned, England imported $1,300,000 of thrown silk, more than one-half being from France, and nearly one-third from China.

In 1860 the British consumption of raw and thrown silk was 9,420,417 pounds; in 1861, 8,125,982 pounds; in 1862, 9,706,202 pounds; in 1863, 8,182,645 pounds; in 1864, 7,541,578 pounds; in 1865, 6,492,720 pounds; and in 1866 it was 5,273,767 pounds.

In 1823 Great Britain exported of silk goods $702,000; in 1844 it exported $3,682,000 in 1856, $14,800,000; in 1858, $11,950,000; in 1861, $11,560,000; in 1865, $10,886,000.

Thus we see that this great manufacturing nation, notwithstanding by its uncongenial climate deprived of the capacity to successfully produce the raw material, has long prose-

cuted a large business in the transformation of this beautiful article, though now seriously checked in many branches of its silk industry by the effect of the recent treaty with France.

What an instructive lesson is thus taught to the citizens of our country, where every thing combines to render the prosecution of this industry preeminently successful.

OTHER EUROPEAN COUNTRIES.

Italy was early famous for its silk culture and manufactures. In Milan and vicinity, in the year 1800, about 2,000,000 pounds of raw silk were said to have been collected. In 1825 the quantity was estimated at 2,700,000 pounds, valued at $10,000,000; in 1858 at 5,400,000 pounds, worth $30,000,000. In 1825 Piedmont produced about 1,500,000 pounds of raw silk of the very highest quality. In the same year Tuscany, Naples, the Romagna, and Calabria produced 1,500,000 pounds, also excellent in quality. In 1851 an Austrian official document stated the productions in the Austrian dominions of Italy at $21,700,000 in raw silk, and $14,200,000 in manufactured silks. In 1855 the total of both kinds of silk in the Italian peninsula was stated at upwards of $60,000,000. A considerable portion is consumed at home, and the remainder exported chiefly to Germany, France and England.

Spain produced in 1842 about 2,000,000 pounds of raw silk, three-fifths of which was raised in Valencia. About 400,000 pounds were manufactured at home, and the rest exported. The Spanish cocoons are excellent, but much of the reeling is defective. Valencia silks, where great care has been taken in the manipulation, are famous for their magnificence.

In Prussia silk manufacture is rapidly increasing. The number of looms in 1831 was 9,000; in 1837, 14,000; in 1855, 25,000; and in 1865 not less than 40,000. In the Exhibition were superb silks, velvets, velvet ribbons, black silk ribbons, mixed and unmixed silk fabrics of various descriptions, from Crefeld, Elberfeld, Viersen and vicinity. The waters in that locality, especially those of the Wippe, hold in solution salts specially adapted to secure permanency and brilliancy the colors employed in manufacture.

Austria is engaged somewhat extensively in silk manufacture, but since she relinquished her Italian dominions this industry has doubtless received a check.

The product of Switzerland in 1858 was placed at $20,000,000. The "Collective Exhibition of the Zurich Manufacturers" of black and colored silks, plain and figured, and the "Collective Exhibition of the Basle Silk Ribbon Manufacturers," as shown in the Exposition evince the progress and perfection to which Swiss skill in silk industry has now attained.

Russia has already been alluded to. After France and England, the nations that come in the order of their importance in respect to silk manufacture are Switzerland, Prussia, Austria, Italy and Spain. France maintains a great superiority over all in her rich and artistic productions; but in plain goods, and those of a secondary quality, she finds serious rivalry in British, Swiss, and German industry. Switzerland is becoming remarkable for her activity, her constant progress, and her improvements in material interests.

In a subsequent part of this report the occasion will be embraced to examine the improvements she brought to the Exposition, since there is a great analogy between the situation and industrial genius of that republic and the social and manufacturing condition of the United States.

ASIATIC COUNTRIES AND AFRICA.

China raises, manufactures, consumes, and exports a vast amount of silk. It is impossible to estimate the quantity consumed at home. A high authority declares that, of her 400,000,000 of people, a large proportion, excepting the lowest classes, are clad more or less in silk fabrics. She exported to England alone, in 1858, nearly 10,000,000 pounds. In the East India Company's possessions the product is large. In 1857 they exported to England about 4,500,000 pounds. Persia produced great quantities, much of which is consumed at home. The amount raised in Syria and Asia Minor is some 2,500,000 pounds per annum, of which a large share is exported to France and England. Reference to other Asiatic countries, of inferior importance in this particular, is omitted.

Silk has long been produced in small quantities along the African shores of the Mediterranean. England imports some of the raw material from Egypt, but the greatest share of the productions of the Nile region is consumed at home. Tripoli produced in 1842 about 130,000 pounds. The islands of Cyprus and Crete raised in 1856 some 50,000 pounds.

SPECIALTIES OF SILK INDUSTRY.

The labor in silk comprises seven distinct branches, forming as many different industries, even when a single manufacturer conducts several in one establishment. These specialties are—

1. The breeding or rearing of silk worms, called in France the art of *magnanier*, (or silk-worm breeder.) This word comes from *magnan*, the name given to the grub of the white mulberry in the south France.

The appellation *magnanerie*, or silk-worm nursery, is given to the locality where the worms are hatched, fed, and attended to from their birth till they have formed their silky envelope or cocoon.

These silk-worm nurseries are generally estab lished in localities or countries favorable to the cultivation of the mulberry tree, of whose leaves, and white fruit especially, the worm is particularly fond; and also where the temperature is regular and moderate. Nevertheless, this last condition is not indispensable. It is replaced artificially by special means of warming and ventilating, so as to maintain at will, constantly the temperature between 70° and 75° Fahrenheit, and thus be able to breed numerous little grubs; (one ounce, or 30 grams, contains about 40,000, while from 20 ounces 800,000 have been obtained at a time in the same place.) The result is arrived at chiefly by watchfulness in ventilation, in removing the vitiated air and replacing it by pure air.

The art of silk-worm breeder embraces what is called "the fabrication of the *graine*," or, more correctly, of eggs to be used in the reproduction. The cocoons destined for this function are the only ones whose chrysalis or grub is allowed to be transformed into the butterfly. These are moistened, and then the grub opens one of the lengthened extremities of the cocoon, and issues from it.

Then the grubs are collected by pairs, male and female, to permit fecundation before the laying of the eggs. These *fecondés*, suspended on paper or cloth, are subsequently put aside until the following spring, in an atmosphere of even temperature, and sufficiently low, like that of cellars.

This part of the art of the breeder, so simple in appearance, demands special knowledge and great care, particularly at this time, when it is so difficult to procure eggs free from the epidemic now raging among the silk-worms.

2. The second specialty in this industry is the *filature*, or reeling of the silk from the cocoons into the threads known as raw silk, and composed of fibres of a certain number of cocoons according to the size of the thread required. It is a most delicate untwisted product, but wanting in lustre on account of its containing some 25 per cent. of gum.

3. The throwing of silk, or the process of putting the raw silk into the threads required for the different kinds of weaving.

It is at the throwing that threads are formed that figure so conspicuously at the Exposition, and also in commerce, under the names of singles, trams, and organzines. There are also other kinds of thrown silk, known as *marabouts*, *grenadines*, *crepe*, *soie ondee*, etc., which are twisted differently from trams and organzines, for special purposes.

Let us look for a moment at the comparative value of each of these denominations. The singles are the raw silk after the first twist. The tram, or woof, is obtained by the union of two or more threads of raw silk, slightly twisted. The organzine, from which in general is made the warp, is the result of two singles twisted together.

A product of peculiar nature, frequently used in the manufacture of trimmings, is the *fil guipe*. It is composed of one or more straight threads, around which is rolled a spiral thread, the interior being generally of indifferent material, and the thread rolled around is composed of silk, gold, or silver.

4. The dyeing constitutes an important speciality, requiring the greatest possible delicacy and skill, pure water being essential to success.

5. The preparation of the threads for the loom is another separate and essential branch, requiring care and attention.

6. The weaving embraces in itself alone several subdivisions, namely, the weaving of plain and cut silk goods; the weaving of velvets of figured stuffs more or less rich; the knitting of various articles and the fabrication of silk *blondes* or laces.

THE SPINNING OF WASTE SILK.

7. The preceding processes yield a certain quantity of waste, varying with the nature of the operations and the qualities of the products.

This waste is in its turn transformed from the raw state, where, after having been cleaned from the gummy matter, chiefly by mechanical means, it presents a close analogy to the strippings and windings of cotton and combed wool.

These processes are the basis of great industries which flourish in Eng land and on the continent.

The threads thus produced vary in value from 30 to 60 francs the kilogram, according to their fineness and quality.

These branches of industry are now carried on to some extent by American manufacturers.

EXAMINATION OF THE POSITION OF EACH OF THESE INDUSTRIES, AND THEIR PROGRESS AS MANIFESTED IN THE EXPOSITION.

In the art of silk-worm breeding the question of first importance consists in the means of obtaining the *graines*, or eggs. Good eggs bear an exorbitant price. They are worth at the rate of 300 francs the kilogram, and still they cannot always be produced guaranteed against the prevailing malady, except from Japan.

The States of South America appear to enjoy the same immunity. At the commencement of the prevailing epidemic, (about the year 1846,) other countries furnished healthy eggs, but their exemption did not continue after the second or third generation. Thus it is that the United States have been led to put all silk-producing countries under contribution.

Will the eggs of Japan and of South America, at the present time so much sought after, escape this degeneracy, of which, despite the numerous investigations, we as yet do not know the cause?

But if the cause remains concealed, the preventive means begin to be more clearly established.

The following method is generally admitted and recommended by men recognized as the most competent judges, and since it is the combined result of great experience and observation, it will be read with interest in all countries which desire to encourage the culture of the silk-worm:

It is of great importance to choose for reproduction cocoons of the largest size, and those the most successfully reared and least effected with the malady during the course of their development. These cocoons are recognized by the regularity of their form, the roundness of their extremities, the fineness of grain on the surface, and the solidity and thickness of the layers or silky envelopes.

The male cocoons differ from the female by their shape and size. The former are smaller than the latter, and present a cavity upon their back. The latter are larger, presenting the figure of an olive or the egg of a small bird.

The color of these cocoons ought to be of a golden-yellow after collecting and should exhibit no spot or stain of any kind.

In the same breed, the heaviest cocoons are in general those which offer the greatest chance of affording the best reproductions. Then, after having put a certain number of male cocoons on one side and of a female on the other, weigh both parts to find the average weight of each, and every time that this average weight is exceeded there is a presumption that excellent cocoons are obtained for reproduction, all other things being equal.

It is however necessary to remark that, as one part of the cocoons contains sometimes the same gross measurement, it should not be confounded with the normal cocoons. Cocoons of an exceptional bulk are in general the result of two grubs united under the same envelope. Their product is known under the name of "doubles," or "*douppions*," or twin threads.

This sort of product is always inferior, as much because the beds or envelopes are almost invisible, as because the association in the work indicates a weakness in the subject.

Notwithstanding all the attention and care given by the breeder to prevent the production of doubles, and sometimes even of triples, he must inevitably expect to find a certain proportion of those, the value of which is hardly one-third the price of the normal product.

There was exhibited in the Exposition an apparatus contrived by an Italian silk husbandman, designed to prevent these *douppions* in the breeding of worms.

The apparatus consists in an arrangement of cells made of very light wood, each one of which has only the bulk necessary for a single grub. When these come to their full development, ready to spin their cocoon or boll, instead of preparing heath, shrubs, or other kinds of shelter or supports against which the worms are to spin, this kind of cells is supplied where each insect has its own separate case, which prevents two or any greater number from uniting to make a defective product.

The Italian exhibitor is endeavoring to bring into general use this system of isolation or cellular breeding.

The system presents, according to the inventor, other advantages, by the facility which it offers in the choice of the best reproducers, and by preventing the coupling between grubs of the same family, consanguinity having been considered as one cause of the rapid deterioration of the breed.

When the coupling has been accomplished, the females are removed and made to lay, each in the cell reserved for her, in such a way as to be able to weigh separately the eggs of each laying.

This weight is not to be inferior to a certain ascertained proportion, for the eggs would then be evidently bad. In order that they may offer good chances of success, each laying should weigh at least 60 or 70 grams, (per kilogram of cocoons,) each gram to contain 1,350 to 1,500 eggs on an average.

THE SILK-WORM AND ITS VARIETIES.

THE COMMON SILK-WORM, (*Bombyx Mori.*)

The common silk-worm and the species mostly in use, and which produces by far the best silk, is born in the spring—ordinarily about the middle of May. It feeds on the leaves of the mulberry tree, and attains its full growth in about six weeks.

During that period it changes its skin four times, and, according to M. de Quatrefages, of the French Institute, increases its weight 72,000 times. Early in July, having reached its full development, it establishes the workshop of its wonderful manufacture.

Placed in a comfortable and secure position, it proceeds to envelop itself in a cocoon formed by a filament of exceedingly fine silk, emitted from the stomach of the insect. It soon disappears in the centre of the cocoon or silken envelope, and, after about 72 hours of unremitting labor, produces a thread ordinarily not less than 1,600 yards in length.

In that chosen retreat the silk-worm again sheds its skin, for the fifth time, but the insect which comes out is no longer a silk-worm, but a chrysalis—bearing but slight resemblance to the worm. After two weeks or more, according to the temperature, the skin of the chrysalis opens, and, changing for the last time, it becomes a butterfly, lays some hundreds of eggs, and dies.

Besides the *Bombyx Mori*, there are other species of silk-worms that merit a brief notice, and particularly the following:

CASTOR-OIL PLANT SILK-WORM, (*Bombyx Arrindia.*)

This species of silk-worm is a native of Bengal and of British India. It lives, both in its wild and its domesticated condition, upon common castor-oil plants and other vegetation. It was but lately introduced into Europe by means of a few living cocoons imported into Malta. Their propagation was not only successful, but was continued in Italy, whence many were sent to France and the Canary islands.

Wherever the castor-oil plant grows spontaneously, as in Algiers, Brazil and Rio de la Plata, the efforts to raise this species of silk-worm have been crowned with success. Its cocoons cannot be reeled in the ordinary way, but they furnish a staple which, when spun into threads, produces fabrics of good suppleness and durability, though almost destitute of lustre.

AILANTHUS SILK-WORM, (*Bombyx Cynthia Vera.*)

This kind of worm is indigenous to the temperate regions of China, where it lives mainly on the ailanthus. It has long been cultivated by the Chinese in the open air, and produced an elongated cocoon of a reddish shade, furnishing a kind of *bourre de soie*, from which is made a very strong and durable tissue.

This silk-worm was introduced into Europe for the first time in 1857, and into France in 1858, where the first successful rearing of it is chiefly due to Madame Drouyn de Lhuys.

But it is to M. Guerin Meneville, who, under the patronage of the Emperor, experimented extensively and with success, that belongs the credit of having given to this silk its growing importance and industrial value.

THE TUSSEH SILK-WORM, (*Bombyx Milita.*)

This notable insect lives in a wild state in Bengal, and in the hot regions of India, in the woods, where the inhabitants go to gather the cocoons, which are remarkable for their size and form. Its favorite food is the leaves of the jujube tree. Efforts have been made repeatedly to reproduce it in France, but in vain. The cocoons of this insect produce a fine and brilliant silk, and very strong, known in India as *tussch* of which large quantities are exported to Europe.

THE WILD SILK-WORM OF JAPAN, (*Bombyx Yama May.*)

This worm, raised from eggs sent from Japan by the Consul-General of France at Yeddo, has been successfully reared. The oak leaf and trees of the same kind are its only nourishment. It does not require great heat, and is easy to raise. Its cocoon, of a greenish yellow, is formed like that of the ordinary silk-worm, and can be reeled into a beautiful silk.

BOMBYX CECROPIA.

This description of worms indigenous to the temperate regions of North America, is found principally in the Carolinas, Louisiana and Virginia.

In its uncultivated state it lives upon the elm, the willow, and other trees. It produces a large cocoon of a loose texture and coarse silk.

At the Exposition there was a collection of silk-worms in their different stages. A quantity of eggs, of mulberry leaves, and all that relates to the rearing of the silk-worm, were also displayed there.

The silk-worm is tender and delicate. The experiences of the last twenty years have proven that it is liable to epidemics, that rage with peculiar violence and fatality.

THE SILK-WORM MALADY AND THE REMEDIES PROPOSED.

During the period in which the disease in question has attacked the silk-worms, great research and the most minute study have been made to ascertain the cause.

Some have ascribed this calamity to the mulberry; others have compared it to a species of Asiatic cholera, or an epidemic analagous to the cattle distemper from which England and Germany have suffered so much within the last few years.

Others have asserted that the breeder had gradually departed from and neglected those healthful traditions and maxims so essential to be observed in the breeding and rearing of such delicate creatures.

The breeder, perceiving that he could abridge the period of rearing by raising the temperature of the nursery, prematurely matured unhealthy broods, and thence there arose numerous accidents, because by raising the temperature the appetite was forced, which caused derangements in the animal economy.

These different causes, more or less vague and indeterminate, may have contributed to the development of the epidemic. However, the theory of disease in the mulberry is hardly admissible, considering that it has been demonstrated that worms of different breeds or races, nourished by the leaves of the same tree, have experienced different fates. Some succeeded, the others were attacked by the disease and perished; therefore the food in these cases was innocent of the effect.

In the difficulties by which we find ourselves involved in endeavoring to determine the cause of the malady, we have only to seek out the character and seat of the evil, to be able *a priori* to reject infected subjects.

After numerous investigations by eminent men, certain spots or bodies of peculiar form and appearance were discovered, with the aid of the microscope, in the very tissues of the diseased worms at the bottom of their digestive canal, evidently foreign to their organization, and in quantities proportionate to the violence of the disease. To these little spots or bodies the name of *corpuscules* was given. They are oval, transparent, smaller than the globules of the human blood, and resemble the globules of certain fermentations.

Widely different theories prevail in regard to those corpuscules and the remedies required for their eradication. The distinguished savant M. Pasteur has come to the conclusion that it is an organic, constitutional affection of the insect, to destroy which either a specific remedy must be found, or else all the conditions favorable to the production of the corpuscules must be avoided, either by obtaining eggs from countries exempt from the malady, or by allowing none but healthy insects to propagate. He has demonstrated

that contact between healthy and infected worms does not impart the disease; while, on the other hand, the absorption of a few corpuscules by feeding upon leaves washed with corpusculous water causes the epidemic to spread with incredible rapidity.

M. Pasteur is of the opinion that search must be made for the corpuscules in the chrysalis, and he developes a very ingenious method for facilitating the discovery.

He recommends the immediate destruction of all insects known to be infected, and the separation from them of the healthy ones, and enjoins the utmost cleanliness as an essential condition for the extirpation of the disease in a silk nursery.

M. Bechamp, who has devoted great patience to the investigation, propounds the theory that the disease is parasitic, and that the parasite is of a vegetable nature of the order of fermentations, and that remedies like creosote will arrest if not destroy the development of these vegetable corpuscules.

His mode of application is to wash the eggs in a solution of creosote, or diffuse an impregnating vapor through the rooms of the silk-worm nursery. Suffice it to say, that the methods recommended by each of these gentlemen for the extermination of the disease have been tried, but with only partial success; but all concur in the opinion that the eggs of diseased subjects are unfit for use, and should be rejected.

It has been demonstrated also that the grubs, the chrysalides, and the moths proceeding from the Japanese race, or that of the South American States, have been to the present free from all trace of corpuscules and all symptoms of the disease.

Practical breeders of the South of France have made very interesting experiments, from which it resulted that the worm when hatched and bred in stables or in sheep folds generally did well.

Comparative experiments prove that the same lot of eggs divided into two parts gave products good in quality and quantity as to the half raised in the atmosphere of a stable while the grubs of the other part bred under the ordinary conditions generally perished.

These repeated trials appear to demonstrate that the grave nature of the affliction can be modified by the alkalinity of the atmosphere which developes itself in so declared a manner under the conditions of which we have just spoken. It is a species of treatment analogous to that of the water and salt of Vichy and other thermal springs.

BREEDING OF SILK-WORMS.

The industry whose object is the production of cocoons is composed of elements so special and so different from those of manufactures in general as to require that some details be given on the subject, partly agricultural and partly manufacturing.

The basis of the labor of the silk-worm breeder is founded in general on the amount of mulberry leaves consumed. These leaves constitute in this case the raw material.

We will give some figures derived from localities where the population is relatively condensed, such as the south of France and the north of Italy, the principal European centres for rearing the silk-worm and the mulberry.

A hectare (or 2,471-1000 acres) of land, planted with 2,500 mulberry trees, produces annually an average of 5,000 kilograms of leaves. The expenses of all kinds for the culture of this quantity may amount to 350 francs a year. Then the 1,000 kilograms of leaves amount to 70 francs. The 1,000 kilograms of leaves support a variable quantity of cocoons. In normal years it may amount to 60 kilograms.

Taking the 1,000 kilograms of leaves as the unit, the average expenses for feeding worms for 30 grams of eggs are as follows:

	Francs.	
30 grams of eggs, with a price very variable, are at the maximum	15	$ 3
1,000 kilograms of leaves	70	14
Manual labor of two persons during 40 days	160	32
Warming and lighting	10	2
Cells for cocoons and incidental expenses	5	1
Total,	260	$52

The fresh cocoons are now worth at least eight francs the kilogram. It would be sufficient to obtain 32 kilograms for every 1,000 kilograms of leaves to pay the disbursements, and if the gatherings yield, as is usual in normal conditions, 50 kilograms only, this would be a gain of 50 times eight, or 400 francs ($80), and if one worked on a basis of one hectare of land only, this would be a gain of 400 times five, or 2,000 francs ($400) in six weeks. There were breeders in France who, before the epidemic, produced as many as 1,000 kilograms of cocoons in a single season.

(TO BE CONTINUED.)

ART. XIV.—AGRICULTURAL.

BY J. C. DELERY.

Fertilizers, their Mode of Action—Reasons for the Combination and Mixture of Fertilizers to make them act as the Source or Cause of the Nourishment of Plants, and the propriety of the Mixture known as David Dickson's Formula. (Southern Cultivator, Atlanta Georgia.)

THE facts must be noted that plants derive their sustenance from the atmosphere through their leaves, and from the earth by absorption through their roots. The first must be absorbed in the gaseous form, and the second in solution with water. The substances that form the stem, the leaves, the fruits, and seeds, are various, and are supplied in various proportions. Silica, and other inorganic substances, are furnished in the soluble form; carbon, the next in relative quantity after silica, is furnished in the gaseous form, and principally through the atmosphere; the ammonia and nitrogenous compounds, are furnished partly in the gaseous, but principally in the soluble form. These substances for the greater part exist in the soil, but are not always in the condition to be assimilated by the plants, hence the necessity of modifing them by the use of fertilizers, to make the soil productive. Fertility is the result of chemical action; and this induced by the contact o agents and substances having mutual affinities, and these agents are the fertilizers.

The compound used by David Dickson consists of Peruvian Guano, Gypsum, Bone Dust and Salt.

Guano being introduced in a soil consisting of sand and clay will cause it to produce crops of substances rich in ammonia, phosphates, and nitrogen and carbon. These are not all derived immediately from the guano. It acts powerfully as a solvent of substances existing in the soil and by enabling plants to draw a part of their sustenance from the atmosphere. Ammonia and potash develop the plant rapidly while young. If they had

no other effect, they would still have the important one of placing the plant in a condition to enable it to draw more freely from the atmosphere, from its having a larger surface of foliage exposed to its beneficent influence. As there is a tendency in all plants to establish an equilibrium in their roots and leaves, the foliage being developed extraordinarily will hasten the growth of additional roots, and *vice versa*. A familiar example of it may be seen in the pruning of the grapevine, which makes it produce a vigorous growth of leaves, stems and fruit, in consequence of the roots being out of proportion with the limbs.

Gypsum (sulphate of lime), being partly soluble, may pass directly into the plant, or it may be decomposed by the carbonate of ammonia existing in rain water, the sulphur being absorbed in the form of sulphate of ammonia. One of the effects of gypsum introduced into the soil, is to give a fixed condition to the nitrogen and ammonia derived from the atmosphere.

If plants be furnished with gypsum (sulphate of lime and salt, chloride of sodium), a mutual decomposition takes place, and new compounds are formed, sulphate of soda, and chloride of calcium. The sulphur and the alkali will be absorbed and assimilated by the plants, and the chloride of calcium will be eliminated by the roots. The salt, then, enables the plants to draw from the soil their sulphur derived from the sulphate of lime.

The alkaline bases existing in a plant are always saturated in invariable proportions with organic acids, and exist in the form of salts of certain acids: potash, in grapes, as cream of tartar (bitartrate of potash); they cannot exist as a neutral compound. The production of a certain quantity of organic acid is required by the peculiar nature of a plant, and if the bases do not exist in sufficient quantity in the soil, the growth of the plant will be arrested. When several bases of alkali are presented to plants they will discriminate to a certain extent, and take up by preference that which is its appropriate base.

If it be found, as it is the fact, that upon land on which fertilizers are used, the phosphate taken off with the crop is in much greater quantity than was given to it in the fertilizers, and that without the fertilizers it would not have produced the phosphated crop, then it must inevitably be concluded that some peculiar action of the fertilizers has developed the phosphated, nitrogenous, and other compounds. Their action has some analogy with that of stimulants and aromatic substances by bringing dormant forces into activity, as humus is made to yield its carbonic acid by combination with oxygen when exposed to the influence of the atmosphere. Humus of wood contains in 100 parts, carbon 52, and water 48. The substance of vegetable mold is more varied, being a mixture of disintegrated minerals, with vegetable and animal substances. In this are found the substances necessary to the nourishment of plants. The peculiar action of fertilizers is to cause these to be presented to plants in a form in which they can be absorbed and assimilated. The humus and vegetable mold cannot be assimilated by plants as such, because it is soluble in water only in the proportion of one-tenth thousandth part. As such soils are known to be most fertile that are richest in vegetable mold, it is important to know what are the chemical transformations it undergoes to become the food of plants.

The ashes of plants furnish potash, lime, sulphuric, and phosphoric acids; these may be assimilated by plants because presented to them in the proper form; if phosphate be presented in the metallic state, it remains inert; salt (chloride of sodium), in solution, if not accompanied by other substances with which it will form chemical compounds, will be absorbed, but not assimilated, and will remain salt. The roots of plants acting like a

sponge to which moisture is presented to them, which appears, however, not to be general, as plants producing soda near to the sea shore will not absorb it under certain conditions; the *salsola kali* requires the chloride of potassium to flourish. Although plants discriminate to a certain extent and take up their proper bases, yet, they absorb generally what comes in contact with their roots in a soluble form, and they may retain it unchanged chemically. An example of indiscriminate absorption is that of the sugar cane, which absorbs salt, and retains it through the whole process of the manufacture of sugar from it.

Salt, besides its chemical combinations with other substances, has its own peculiar quality and beneficial effect in drawing moisture from the atmosphere by its affinity for water.

We may now understand the various effects of David Dickson's mixture. If he arrived at his results by Chemical researches and analysis, he is entitled to all the merits of an inventor; if not, then he has shown considerable sagacity in conducting his experiments. If greater perfection is to be reached, it must be by a strict analysis of soils, and a study of the peculiar substances required for the growth of plants. The analysis of soils, to determine what are the ingredients in which they may be deficient, in order to be able to supply them; when the soils may contain the ingredients, but in a form in which they can not be assimilated by plants; and what are the substances which it may be necessary to add to produce chemical changes for converting them to the proper form, either gaseous or liquid. An analysis of the constituents of plants is necessary to determine what are the ingredients required for their production. It could, perhaps, be discovered that these ingredients would require to be furnished at different times and seasons to produce their best effects. The junctions of plants for the formation of their own substance are active at various times and seasons, according to the kind of product elaborated; as the formation of sugar, starch and gum occurs when the plant has attained a certain degree of maturity, and ceases when the function has been fulfilled, and so for others. There is, then, a time at which it is proper to furnish the ingredients to produce their best effects. If put into the ground long before they are wanted they may be exposed to loss; if too late, their action is missed. The growth of a cutting, making roots and leaves from its own substance, shows that the starch was stored in it in the fall season; after its transformation into a new being with roots and foliage, it requires a new and different nourishment with its new capacities.

THE VALUE OF IMMIGRATION.

That much of the prosperity of the United States is due to the tide of emigration which for over ninety years, has been carrying thousand after thousand of strong, willing laborers to these shores, is a truth that needs no demonstration. It is manifest on every side, and has been recognized by every man. Immigration is really the strength and dependence of the country. Medical writers have compiled and published statistics showing that without the foreign element in our body politic, the population of some sections of the country, especially New England, would be less to day than it was thirty years ago. It is to immigration that we owe the rapid development of our immense national wealth, and we also owe to it much of the spirit which has placed the United States in the foremost rank of civilized nations. But immigration has done more than this for the American republic. It is the main stay of the conservatism which alone can save the country from

the gulf of anarchy, and which is now beating back the hosts of chaos fighting under the banner of Radicalism. If the foreign-born voters of the United States were disfranchised this year, before 1872 the party of despotism and destruction would be in possession of every State and Federal office in the country.

During the forty years ending with 1860, over five millions of immigrants reached the United States. The exact number was 5,062,414. In the eight years following 1860, the arrivals numbered 1,715,854. Of this number, perhaps, 200,000 were temporary visitors, or Americans who had been abroad. Deduct these, and we still have over a million and a half of immigrants in eight years; but again, if those who come through Canada are added, the number will be largely increased. Thus, then, in less than half a century, we have received from foreign countries nearly seven millions of people, the great body of whom settled in this country and made it their home, becoming merged in the general population, and as thoroughly identified with our interests, social, political and industrial, as though they had been born on the soil. Moreover, the mass of immigrants are young men and young women, who soon become the fathers and mothers of at least three times their original number. It is not too much to estimate the gain of population from this source since 1820 at 10,000,000, which, with the 7,000,000 immigrants, make a total gain of 17,000,000, or nearly half the present population of the country.

But this is not all. The wealth represented by each new-comer is an important item. Up to 1855, the great majority of immigrants were of the poorer class, since that time, however there has been a change. Most of the immigrants now arriving bring with them money and property, and thus contribute to the aggregate public wealth. In a carefully prepared paper recently read before the Social Science Association, by Mr. Frederick Kapp, the value of the property brought by each was estimated at $150. Supposing the whole number of immigrants arriving in one year to be 250,000, which is, in fact, considerably below the present average, they represent, on this estimate, an annual addition of $37,500,000 to the wealth of the country. This, in ten years, would be nearly $400,000,000, and in twenty years, with interest, over $1,000,000,000. But there is besides, the value of their labor. Each able-bodied immigrant, and not many are otherwise, is supposed to be worth $1,000, to the State or section in which he settles. Taking this estimate for a basis and supposing the number of able-bodied immigrants arriving in twenty years to be 2,000,000, they represent an addition of $2,000,000,000 to the capital of the country, or, with the property they bring, about $3,000,000,000. This may at first seem an extravagant estimate, but it is based upon statistics prepared by men who make a special study of political economy.

The facts here briefly presented show the great importance of encouraging immigration in every possible manner. It has been one of the chief sources of the prosperity of the United States, and will so continue while it lasts. Without it, the material progress of the country would stop for want of the power that propels it, and even the population might stand still, and eventually diminish. Immigration is the main hope for the future greatness, power and wealth of the Republic, and for its political stability as well.

TOBACCO CULTURE IN THE UNITED STATES.

As tobacco is attracting a large share of public attention, it may not be amiss to refer briefly to some of the statistics on the subject. To show that its production is progressive, we need only compare the crop of 1850 with that of 1860. The amount of tobacco raised in the States and Territories of the Union, in 1850, was 199,752,655 pounds. In 1860 it reached 434,209,461 pounds, an increase of nearly 220 per cent. In 1850, Virginia raised

56,003,227 pounds, and Kentucky 55,501,196 pounds. In other words, in 1850, out of a total product of tobacco of less than 200,000,000 pounds in the States and Territories, these two States produced over one hundred and twelve millions. Of the amount of 434,209,461 pounds produced in all the States and Territories in 1860, Virginia produced 123,968,312 pounds, and Kentucky 108,126,840 pounds. In other words, Virginia and Kentucky produced in 1860 more than half the tobacco grown in the United States. It is a curious fact that more or less tobacco is raised in every State and Territory except Dakota. Of course the amounts in some are very small—for instance, ten pounds in Washington Territory. In 1850 the amount of tobacco raised in all the States and Territories was eight pounds to each inhabitant, and in 1860 about fourteen pounds. The amount raised in the New England States in 1850 was 1,405,920 pounds; in 1860, 9,266,445 pounds. Connecticut rose from 1,266,624 pounds in 1860 to 6,000,133 pounds; Massachusetts from 138,246 pounds in 1850 to 3,233,198 pounds in 1860. The amount raised in the Middle States in 1850 was 22,411,447 pounds; in 1860, 47,531,517 pounds. New York increased her production from 83,189 pounds in 1850 to 5,764,582 pounds in 1860. Pennsylvania increased from 912,651 pounds in 1850 to 3,181,586 pounds in 1860. The increase in Maryland was from 21,407,497 pounds to 38,410,965 pounds. The amount raised in the Southern States in 1850 was 90,961,429 pounds; in 1860, 203,642,093. Of these two hundred and three and a half million pounds raised in the Southern States in 1860, Virginia, Tennessee and North Carolina raised two hundred millions. The amount raised in the Western States in 1850 was 84,963,997 pounds; in 1860, 173,758,787 pounds. Next to Kentucky, Ohio and Missouri are the greatest tobacco-growing States in the West. The amount raised in the Pacific States in 1850 was 9,862 pounds; in 1860, 10,609 pounds. The production of tobacco in Kentucky and in the Southern States was most seriously affected by the war. But it is being rapidly stimulated of late, and it will not be long before the tobacco States of the South will resume their supremacy. Virginia surpasses all other States in the quality of her tobacco, and the best brands of chewing and smoking tobacco are made here. Tobacco manufacturing is better understood here than anywhere else in the world. The principal variety of tobacco grown in the Northern States is the Connecticut seed leaf. It is ordinarily grown for cigar wrappers. For smoking or chewing it is an inferior variety. In fact, it seems impossible to grow a good quality of chewing tobacco in the Northern States. To show the value to the Government of the Virginia tobacco crop, we may here refer to what has before been brought to the notice of our readers, that the collection of tax on tobacco in this State for the seven months ending September 30 was $2,194,353 98, against $225,614,61 for the same period last year—the increase this year being $1,968,739 38. The Supervisor estimates that the revenue from tobacco in Virginia for the year commencing March, 1869, and ending March, 1870, will be at least $3,000,000 greater than for the previous year.

EDITORIAL.

Our readers will bear witness that we have never troubled them with complaints or apologies. The Review has been published later in every month than in justice to itself it should have been. We have never adverted to this until the time should arrive when it would be corrected. We now take the responsibility of assuring our readers that on and after the ensuing number, and from the first of January next the printing arrangements of the Review will be such as to ensure punctuality in its appearance. We may add with becoming modesty, that the kind notice of the press and people of the South, will authorize us to say that the material of the Review will be even better than that which has met their favor. The publication of the Review by the Southern Publishing Company will relieve the editor from personal superintendence of the details of printing, and leave him free to devote his labors exclusively to his appropriate department.

The Dolbear College.—This long established and useful institution offers to the thousands of unemployed young men of the South a business education, which, although conveyed in a single session of a few months, may enable a man of intelligence to demand a much higher rate of salary than he could otherwise obtain. The extended experience of Professor Dolbear, with his well known ability to communicate a knowledge of financial and mercantile affairs, will entitle this institution to the favorable patronage of the Southern public. As the scope for which the Dolbear College was incorporated comprehended an entire polytechnic system, we should be gratified to see other professorships of applied science endowed and established permanently. This might easily be done by including such colleges as Dolbear's within the University of Louisiana, as is done by the University of Cambridge in England, and bestowing upon them a competent support.

Washington Hotel, Lake Ponchartrain.—Such of our city and country friends as like waterview under the most favorable circumstances had better visit the delightful establishment of our friend, E. Denechaud, Esq. From the spacious verandah and galleries, the lake expands and disappears in the horizon, and whether the waves slumber "like an unweaned infant," or are lashed into fury by a tropical hurricane, the visitor can sit, a safe and serene spectator, sipping, if he will, all the time, the choicest champagne, enjoying the richest champignons, or any other domestic and foreign luxuries which make life so delightful, if a man has only the means to enjoy it. So if ladies and gentlemen visit New Orleans, they cannot well leave without having seen one of its lions—lake Ponchartrain, and we think there is no better cicerone under whose auspices this attractive scene can be examined and enjoyed, than E. Denechaud, Esq., the accomplished host of the Washington Hotel, of lake Ponchartrain.

Stern's Raw Bone Super-Phosphate.—Among the numerous fertilizers submitted for public patronage, we know of none which appear under more favorable auspices than this. The preparation of bone is made under the superintendence of a highly competent chemist, while the ample capital, and well known commercial integrity of the house of Louis Stern & Brothers, long known among us, guarantee a genuine article. The effects of this fertilizer are well attested by numerous certificates in print. We have, ourselves, visited these extensive Raw Bone Works. They are so situated as to command both a domestic and foreign supply of bone, and possess admirable facilities for shipping ground bone by rail or water to every part of the Southern States.

Our acknowledgements are due to Messrs. A. S. Barnes & Co., publishers of school books, 111 and 113 William street, New York, for the following volumes of the national series of standard school books: "Fourteen Weeks in Philosophy," "Fourteen Weeks in Chemistry," "Fourteen Weeks in Astronomy" and "Davies' Practical Arithmetic."

New Orleans, November, 1869.